PRINTING EQUIPMENT

We are proud to Announce . . .

After 28 years of continuous publishing, we are proud to announce that we have outgrown the name "Printing Equipment Engineer" and with the June Issue, "PRINTING PRODUCTION" takes its place.

"PRINTING PRODUCTION" becomes *the* magazine for the Printing Industry devoted exclusively to *production,* with exclusive controlled circulation to executives in charge of *production.*

The change in name is one of many that are being made, including improvements in typography, paper stock and format. Circulation continues to increase and future issues will have the same thorough, accurate editorial material.

We think you'll like "PRINTING PRODUCTION"

Don Hall

PUBLISHER

A CHECK LIST FOR QUADDER EXTRAS

- Double Speed Measure Control
- New Vise Jaws and Blocks
- Automatic Line Stop Return and Cover
- One-Piece Assembling Elevator Gate with Friction Rail
- New Vise Locking Studs
- Electro Pump Stop Safety
- "No-Set" Delivery Slide with Improved Long Finger Block
- Hardened Improved Assembler Slide and Brake
- Adjustable Vise Locking Screws with Replaceable Tips

SELECTRO-MATIC HAS THEM ALL

Yes, you get all these extras at the price of a standard Star Selectro-Matic Quadder. But that's not all . . . in addition to the finest quadding mechanism, when you install Selectro-Matic Quadders on your line casting equipment, you receive hydraulic actuation, push button controls and automatic quadding of short lines. To this add ultra simplicity of operation and 8-hour installation and you can understand why there are so many enthusiastic Star Quadder users.

If any machine in your shop handles an average of 2 hours a day of quadded composition, it should be equipped with a Star Quadder . . . and it will pay for itself, in saving of production time, in about a year.

Write today for a list of Star Quadder users and full details about the trouble-free Selectro-Matic Quadder.

Precision TRADE ★ MARK Parts

STAR PARTS, Inc.
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BRANCH: 1327 BROADWAY, KANSAS CITY, MO.
AGENCIES: CHICAGO • MINNEAPOLIS
LOS ANGELES • DENVER • SO. ACTON, MASS.

For More Information Circle 67 on Reader Service Card

Something NEW is coming from STA-HI

. . . latest developments from STA-HI in equipment and methods for precision production of DAILY NEWSPAPER COLOR will be introduced at the ANPA Mechanical Conference at Atlantic City in June . . . See actual working demonstrations and graphic displays at our Exhibit Booths 43 to 46, just a few steps from Conference Registration Headquarters in Haddon Hall Hotel . . .

probing new horizons in newspaper production . . .

STA-HI CORPORATION

FACTORY AND OFFICES: 235 W. WASHINGTON BOULEVARD, WHITTIER, CALIFORNIA

For More Information Circle 165 on Reader Service Card

EXAMPLES *of Typographic Perfection...*

...THAT ACTUALLY COST LESS FROM COPY TO PRESS

The publishers of these famous periodicals not only recognize typographic perfection but also require economies in production. They have found that the Monotype system meets their exacting needs by providing typographic perfection and actually costs less from copy to press than other typographic methods.

The advantages of the Monotype system, however, are not limited to the big circulation periodicals. For instance, take a look at some publications with limited circulations, *Plating, Mechanical Engineering or Chemical Engineering* . . . you'll see further examples of outstanding typography produced at interesting economies for their publishers.

Let us show you the many advantages of Monotype not only for publication and book work but also advertising copy, tabular matter and technical literature as well. A card from you asking for a copy of our booklet "The Monotype Family" will bring you the story about this system that publication leaders endorse without reserve. Get the facts, today. There's no obligation.

POST

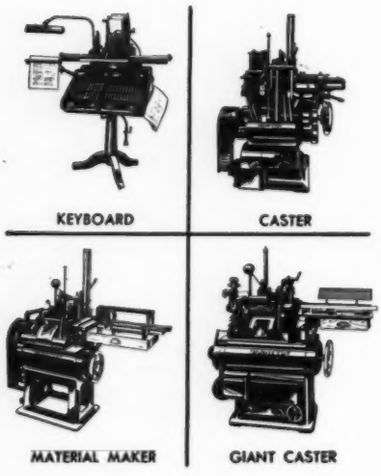
JOURNAL

Better Homes

FORTUNE

SPORTS

LIFE



LANSTON MONOTYPE COMPANY

A DIVISION OF LANSTON INDUSTRIES INCORPORATED

24th & Locust Streets • Philadelphia 1, Pa.

BRANCHES: Atlanta—Chicago—New York—Philadelphia

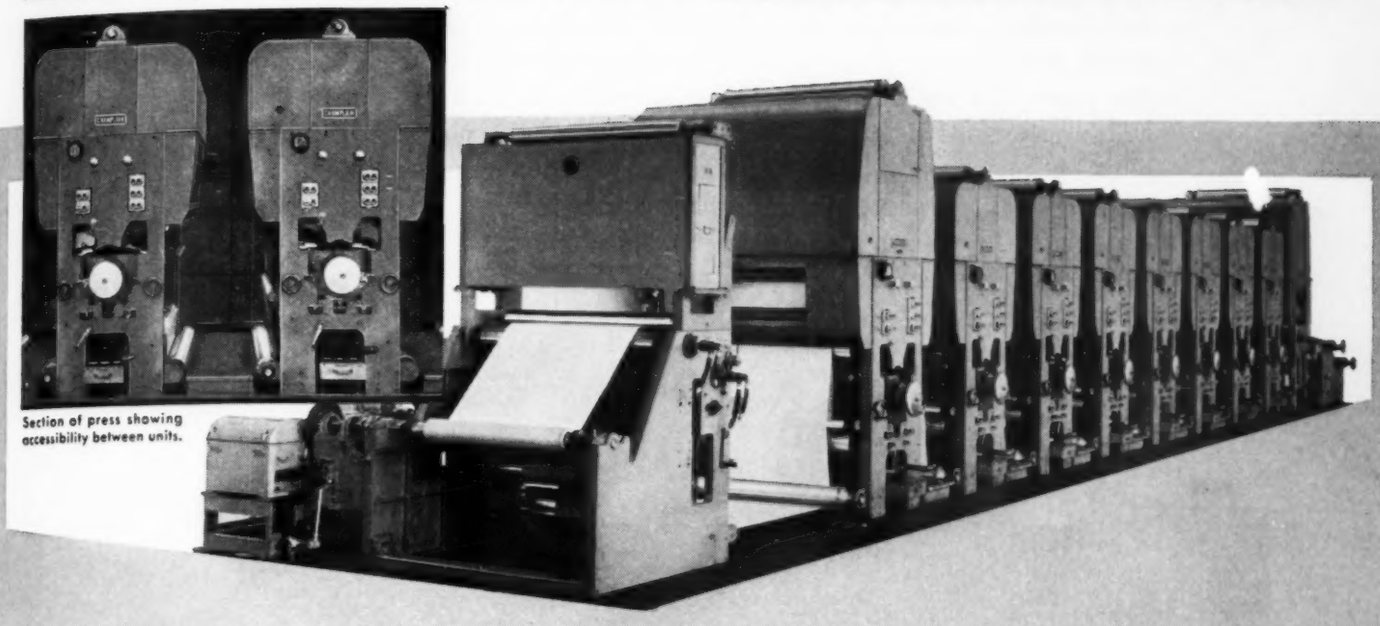
DISTRIBUTORS: South America: Companhia Lanston Do Brazil, Rio De Janeiro

Type set in Monotype faces 20th Century and Century Series

For More Information Circle 102 on Reader Service Card

The All-New Champlain

Heavy Duty Gravure CONVERTER Press



Section of press showing accessibility between units.

Advanced design features meet the needs of modern printers. The new Champlain CONVERTER leads with:

- Walk-in accessibility between units
- Rapid change-over of cylinders and related parts
- Dual inking system for high speed operation
- Upper and lower limit stops of the impression cylinder
- Totally enclosed splash-proof fountain
- Air-loaded doctor blades
- High velocity, tubular design air dryers
- Rapid traverse hydraulic impression system
- Internal-external gear drive to engraving from drive housing
- Backlash-free worm gear drive

HEAVY DUTY CONVERTER WITH WALK-IN ACCESSIBILITY

The new Champlain Heavy Duty CONVERTER is outstandingly versatile. Printing width is 44 or 54 inches. It accepts cylinders from 20 to 40 inches circumference. Complete roll-to-roll and rewind operation is assured with all types of web material. High speed, plus printing quality, is maintained on a wide range of work including cellophane, paper backed foil, gift wraps, beer labels, bread or frozen food wrappers, wallpapers, etc.

The new walk-in design increases operating efficiencies by saving time on the job and during change-over. Operators walk between printing units to control all adjustments with minimum effort. No platforms or ladders to climb. Threading and webbing is done at hand level. Extended dryer sections are equipped with threading chains.

Maximum economy of operation throughout is assured by the job-tested design of this new Champlain CONVERTER. Proven features, engineered for heavier duty at higher speeds are integrated with new, complementary features for improved performance.

The Champlain Company brings 25 years of design and engineering experience to the latest Heavy Duty CONVERTER. To learn how this new press can improve your production—cut your costs—write us for the New Heavy Duty CONVERTER Press Booklet. Champlain Company, Inc., 88 Llewellyn Ave., Bloomfield, N. J. Chicago Office: 520 N. Michigan Ave., Chicago 11, Ill. In Europe: Bobst-Champlain, Prilly-Lausanne, Switzerland.

Champlain

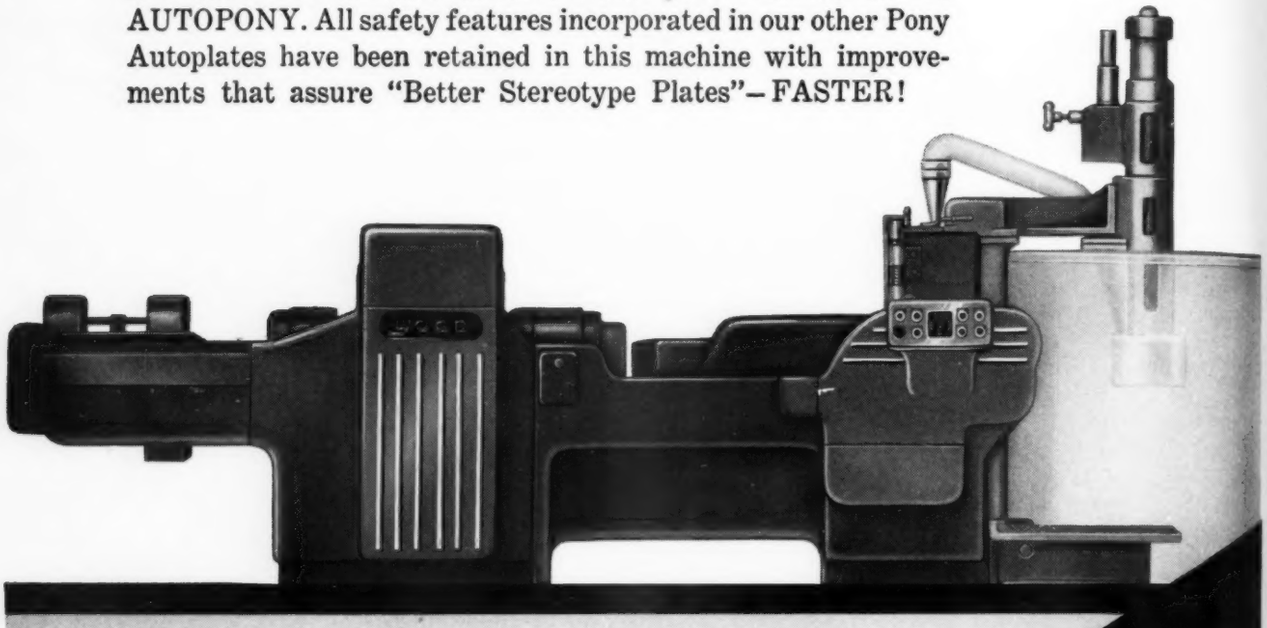
Champlain manufactures a complete line of rotogravure, flexography, rotary letterpress and allied equipment for packaging and specialty printing.

For More Information Circle 38 on Reader Service Card

THE WOOD AUTOPONY

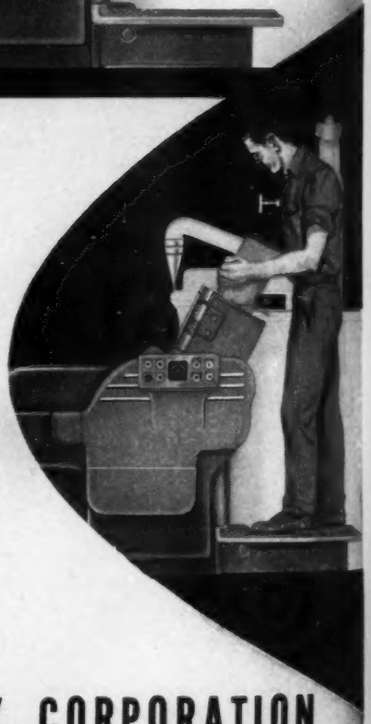
a New Method of producing plates AUTOMATICALLY!

The new WOOD AUTOPONY streamlines the entire horizontal operation of plate making. As the name implies, all phases of the operation from pouring to cooling are streamlined. As a result, the AUTOPONY casts, shaves and cools at the rate of 2½ plates per minute without the necessity of manual lifting which may cause distortion. For tensionplate lockup, plates may likewise be moved into the Automiller placed at the end of AUTOPONY. All safety features incorporated in our other Pony Autoplates have been retained in this machine with improvements that assure "Better Stereotype Plates"—FASTER!



CASTING CYCLE . . . When starting button is pushed, it engages an interlock making impossible the inadvertent operation of casting box tilting mechanism. Starting button also activates automatic cycle for casting, shaving and cooling of any number of plates desired from mat set in casting box. Machine shuts off automatically when correct number of plates, as controlled by a timer, have been cast.

MAT POSITIONING... Casting Box tilted backward approximately 20°, to permit operator to set mat into clips faster and easier. Tilting operation initiated by control button. After mat and pouring sheet have been set and locked in casting box, control button returns box to vertical position, ready to start casting cycle.



Wood

WOOD NEWSPAPER MACHINERY CORPORATION

PLAINFIELD, NEW JERSEY • Executive & Sales Office: 501 Fifth Avenue, New York 17, N.Y.

MAKERS OF PRESSROOM, REELROOM AND STEREOTYPE EQUIPMENT FOR A CENTURY

For More Information Circle 190 on Reader Service Card

MAY 1958
VOL. 88, NO. 8

PRINTING EQUIPMENT *Engineer*

THE PRINTING PRODUCTION MAGAZINE

Published especially for management, production and mechanical executives responsible for printing production and the specification of equipment and supplies used in all major processes of the Graphic Arts industry.

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Member Publications BPA Business Audit

Accepted as Controlled Circulation Publication at Cleveland, Ohio.

OUR COVER: The announcement on this month's cover is to inform readers of our name change effective with the June issue. We feel the new name PRINTING PRODUCTION more clearly identifies the production and technical features which have been brought you monthly in years past. We will continue to bring you the complete story of new developments in the printing industry as they happen. There will still be articles on production ideas, problem solving, operations of printing plants, and reports of conventions and conferences. Also, look for a continuation of roundup stories on specific subjects incorporating all important information available. This magazine continues to be your best source for the latest in production and technical information.

LETTERS

TO THE EDITORS

Response to Production Story

We wish to thank you for the excellent way in which you took care of the story on our production control system (see *Printing Equipment Engineer,* January 1958, page 27). The comments which we have heard were quite flattering both to your magazine and our system. To date we have heard from 11 printing companies in the United States and one in Canada, requesting copies of our forms and indicating that they plan to adopt parts of our system.

Everett B. Kellogg, Manager
Amherst Printing Co., Inc.
Buffalo, N. Y.

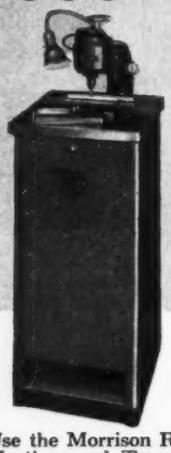
The Formica Trademark

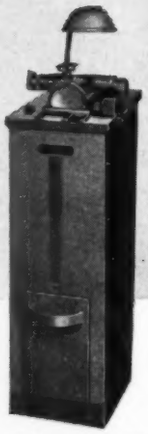
In your story about Corpus Christi (Tex.) *Caller-Times'* new plant (March 1958, page 68) you mention the use of Formica in the building and spell the name with a lowercase "f". Formica is a specific brand of plastic laminate and is a registered trademark, therefore should always be capitalized.

Howard Nadel
Public Relations Director
Perry-Brown, Inc., Advertising
Cincinnati, O.

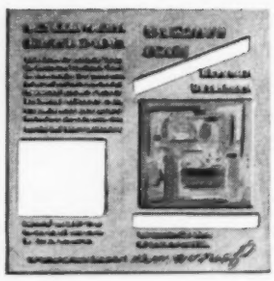
$890.00 gives you the "Ins and Outs" of composing room production.

Reduce time for copy changes and corrections on your shell casts to a minimum.

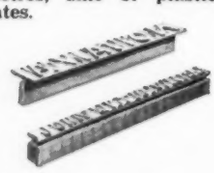




Use the Morrison Router, Mortiser and Type High Planer for your plate corrections — remove unwanted copy with a clean cut mortise or route away dead metal — all with the same machine quickly, safely, accurately with conventional methods.



Use the Morrison Slug Stripper for stripping slug lines to be inserted — strip correction lines or lines for intricate angle layout to any thickness to match with shell cast, electros, zinc or plastic plates.



The Morrison Slug Stripper ($435.00) and the Morrison Router, Mortiser and Type High Planer ($455.00) will give you the most efficient tooling ever designed for composing room use. Nothing else will do this job as well.

Write or telephone for complete information on either or both of these machines now considered standard equipment for your composing room. This could be the best purchase you have ever made.

THE *Morrison* COMPANY
125 WEST MELVINA STREET, DEPT. P., MILWAUKEE 12, WISCONSIN

For More Information Circle 127 on Reader Service Card

Among the Best

WE ARE PLEASED TO ADVISE THAT THE FOLLOWING ARTICLE: *NYLON LETTERPRESS PLATES* FROM YOUR JUNE ISSUE, IS TO BE INCLUDED IN THE 1958 EDITION OF *GRAPHIC ARTS PROGRESS* STOP CONGRATULATIONS AND MANY THANKS STOP

J. K. BARRY
FRASER PAPER, LTD.

Mr. Barry's reference is to a booklet entitled Graphic Arts Progress *which includes reprints of what a judging panel has selected as the best articles appearing in trade magazines in* 1957. *The booklet is published annually by Fraser Paper, Ltd. and is available upon request. We are especially proud to have again been selected. The article* Nylon Letterpress Plates *is by Dr. Robert M. Leekley and appeared in* Printing Equipment Engineer *in June* 1957, *page* 57.

A Spaceband Tip

In your January issue (page 47) the complete and expert article on *Spacebands* is the finest I've ever read. I sincerely congratulate the author, Quido E. Herman.

But, I wonder about the size of the Philippine mahogany ¾ in. thick board he recommends for cleaning spacebands. Just try and find that solid mahogany 2 ft. by 2 ft. in lumber yards around here.

We have excellent results with a board 2 ft. by 8 in. with molding on the two short ends and one long side.

Elmer E. Stewart, Machinist
North Attleborough (Mass.) *Chronicle*

Color from Fairchild Plates

Your composite series on ROP color (*Run-of-Paper Color For Daily Newspapers*) by Vernon R. Spitaleri was very helpful in preparing our first editorial color. Plates for the full-color illustrations were made on a Fairchild Scan-A-Graver which we believe to be the first such application in Indiana. We are planning to continue our study of ROP color, particularly ink and registration problems.

Robert J. Mathes, Color Coordinator
Peru (Ind.) *Daily Tribune*

Removing Plates from Base

Sometime ago you inquired for an easy method of removing scrap plates from mounting bases. Here is a solution that works well with us: We use an ordinary electric hot plate and a piece of steel about ⅛ in. thick large enough to take our largest plate. We lay the steel on the hot plate, turn on the unit, then lay the cuts face down on the steel. As soon as the cuts get hot enough, the double coated tape softens and the plates practically fall off the bases. The piece of steel distributes the heat more evenly than would be the case if the cuts were placed directly on the hot plate.

C. Marsh Gabriel, Publisher
Plymouth (Wis.) *Review*

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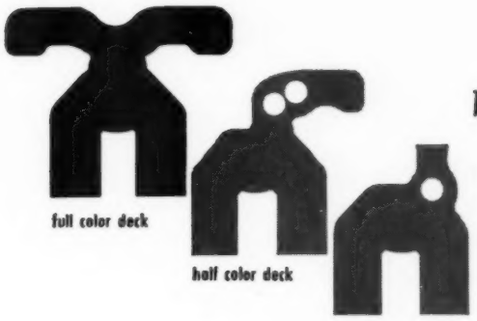


With Goss Headliners
you can <u>select</u> the
best color arrangement

GOSS HEADLINER® FULL COLOR DECK
provides wide range ROP Gosscolor flexibility

Just one of many ROP Gosscolor arrangements, the Headliner *Full Color Deck* has a great deal of flexibility within itself. Working with the press units, it makes possible numerous web lead combinations for printing either spot or process color. Add to this, under-the-folder leads and bay-window web lead arrangements for greater color positioning and you can see why Headliner is the most versatile color press available. Three colors one side with black on the other . . . four colors consecutively . . . spot color in all page positions . . . all of these can be done economically.

And flexibility can be yours from initial planning, with the *selection* of the best ROP Gosscolor arrangement. In addition to full color decks, the Headliner offers half-decks, single color cylinders, super-imposed color units, and color fountains all of which can be used in various combinations to fit your specific requirements. Our experienced staff will be happy to assist you in planning the ideal arrangement for your operation at no obligation.

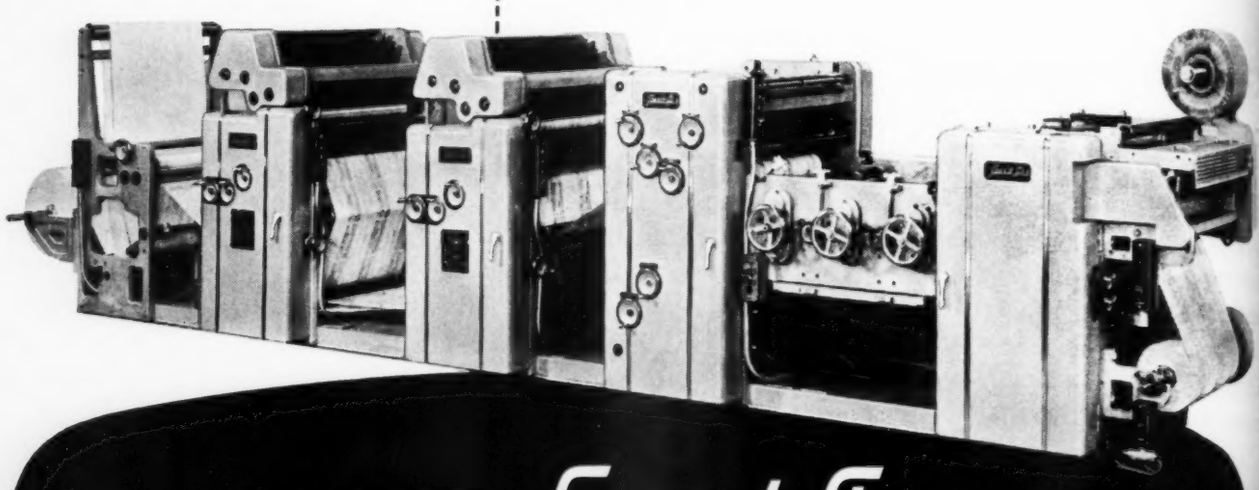
Contact your Goss representative . . . be sure of maximum flexibility and efficiency by *selecting* from the wide range of ROP Gosscolor combinations—just one of the many firsts of Goss advanced design.

The GOSS Company
[illegible] West 31st Street
Chicago 50, Illinois

A Division of
Miehle-Goss-Dexter, Inc.

only Speed Flex has LINEARSCOPE

The electronic device that measures and sets the throw lengths on line hole punches while your press is operating at top speed. Manufactured by Western Gear, makers of all Speed-Flex presses marketed by Orville Dutro & Sons, Inc.



the new UNIT-TYPE Speed Flex OFFSET and RUBBER PLATE PRESSES

offer these new material and labor saving features:

- Linearscope—automatic throw length control
- Unexcelled ink distribution
- Easy accessibility
- Electrically controlled water feed
- Automatic successive numbering throwoff and reset
- Electronic clutch selector
- Plus all the other Speed-Flex advanced features

Standard sizes: 13″ web width by 16″ and 17″ cylinder circumferences 26″ web width by 17″, 21″ and 22″ cylinder circumferences

Deliveries: Usually 30 to 90 days. Special sizes on delayed deliveries

For further information write, wire or phone collect

Western Gear CORP.

Orville Dutro & Son, Inc.
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CHICAGO, ILL. 81 W. VAN BUREN ST. RANDOLPH 6-7977

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the other side of this
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and best way to let us
know of any change
that should be made
your address.

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CLEVELAND 13, OHIO

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MY OLD ADDRESS READ:

(THE EASIEST AND BEST WAY TO GIVE US THIS INFORMATION IS TO CUT OUT THE ADDRESS SECTION OF YOUR MAGAZINE WRAPPER AND STAPLE TO THIS CARD)

NAME_____

COMPANY_____

COMPANY ADDRESS_____

CITY_____ ZONE____ STATE_____

MY NEW ADDRESS IS:

NAME_____

TITLE AND DEPT._____

COMPANY_____

COMPANY ADDRESS_____

CITY_____ ZONE____ STATE_____

FOR YOUR CONVENIEN

This postage- is for your ience in l know of any that should b in your—

COMPANY AD
COMPANY NA
TITLE, ETC.

Temperature Conditioning Chart* FOR MEAD

FINE PRINTING PAPERS

When paper comes into your plant in cold weather, it needs to warm up before it runs, just like a good athlete. Take care of this before you remove its moisture-resisting wrapper. Follow the chart below, which shows outdoor and pressroom temperatures, size of paper skid or case, and time required to condition your Mead paper.

Cubic Volume of Paper on Skid or in Case	DIFFERENCE IN TEMPERATURE of paper upon arrival (or outside temperature), and that of room where paper is to be opened							
	10°	15°	20°	25°	30°	40°	50°	60°
6 cubic feet	5 hrs.	9 hrs.	12 hrs.	15 hrs.	18 hrs.	25 hrs.	35 hrs.	54 hrs.
12 cubic feet	8 hrs.	14 hrs.	18 hrs.	22 hrs.	27 hrs.	38 hrs.	51 hrs.	78 hrs.
24 cubic feet	11 hrs.	16 hrs.	23 hrs.	28 hrs.	35 hrs.	48 hrs.	67 hrs.	100 hrs.
48 cubic feet	14 hrs.	19 hrs.	26 hrs.	32 hrs.	38 hrs.	54 hrs.	75 hrs.	109 hrs.
96 cubic feet	15 hrs.	20 hrs.	27 hrs.	34 hrs.	41 hrs.	57 hrs.	79 hrs.	115 hrs.

Hours shown are approximate time paper should stand unopened, to come into balance with room temperature

*Official Chart by Lithographic Technical Foundation

NOTE: Cubic feet for skid or case is determined by multiplying length x width x height (in inches) and dividing by 1728

MEAD *papers*

THE MEAD CORPORATION

DAYTON 2, OHIO

For the name of the Mead Merchant nearest you, consult the listing on the reverse side of this chart.

Offset Lithography on MEAD BLACK AND WHITE COATED OFFSET COVER, 60 lb.

MEAD PAPERS

are available through these merchants

AKRON, OHIO
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ALBANY, N. Y.
W. H. Smith Paper Corporation

ALBUQUERQUE, N. MEX.
Dixon & Company

ALLENTOWN, PA.
G. A. Rinn Paper Company

APPLETON, WISCONSIN
Woelz Bros., Inc.

ATLANTA, GA.
Dillard Paper Company

AUGUSTA, GA.
Dillard Paper Company

BALTIMORE, MD.
Barton, Duer & Koch Paper Company
Baxter Paper Company
White-Rose Paper Company

BETHLEHEM, PA.
Wilcox-Walter-Furlong Paper Co.

BILLINGS, MONT.
Dixon & Company

BIRMINGHAM, ALABAMA
Dillard Paper Company

BOISE, IDAHO
Dixon & Company

BOSTON, MASS.
John Carter & Company
Carter Rice Storrs & Bement, Inc.
Colonial Paper Co.

BRISTOL, VA.-TENN.
Dillard Paper Company

BROCKTON, MASS.
J. C. Campbell Paper Co.

BUFFALO, N. Y.
Franklin-Cowan Paper Company

CHARLESTON, W. VA.
Copco Papers, Inc.

CHARLOTTE, N. C.
Dillard Paper Company

CHATTANOOGA, TENN.
Southern Paper Company

CHICAGO, ILL.
Bermingham & Prosser Company
Chicago Paper Company
La Salle Paper Co.
Messinger Paper Company
James White Paper Company

CINCINNATI, OHIO
Chatfield Paper Corporation
Diem & Wing Paper Company

CLEVELAND, OHIO
Cleveland Paper Co.
Union Paper & Twine

COLUMBIA, S. C.
Palmetto Paper Co.

COLUMBUS, OHIO
Central Ohio Paper Company
Scioto Paper Company

CONCORD, N. H.
John Carter & Company

DALLAS, TEXAS
Clampitt Paper Company

DAYTON, OHIO
Hull Paper Company

DENVER, COLO.
Dixon & Company

DES MOINES, IOWA
Bermingham & Prosser Company

DETROIT, MICH.
Beecher Peck & Lewis

DULUTH, MINN.
John Boshart Paper Co.

EUGENE, ORE.
Zellerbach Paper Co.

FARGO, N. D.
The John Leslie Paper Co.

FLINT, MICH.
Beecher Peck & Lewis

FORT WAYNE, IND.
Taylor-Martin Papers, Inc.

FORT WORTH, TEXAS
Clampitt Paper Company

GRAND RAPIDS, MICH.
Carpenter Paper Company

GREAT FALLS, MONT.
The John Leslie Paper Company

GREENSBORO, N. C.
Dillard Paper Company

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Dillard Paper Company

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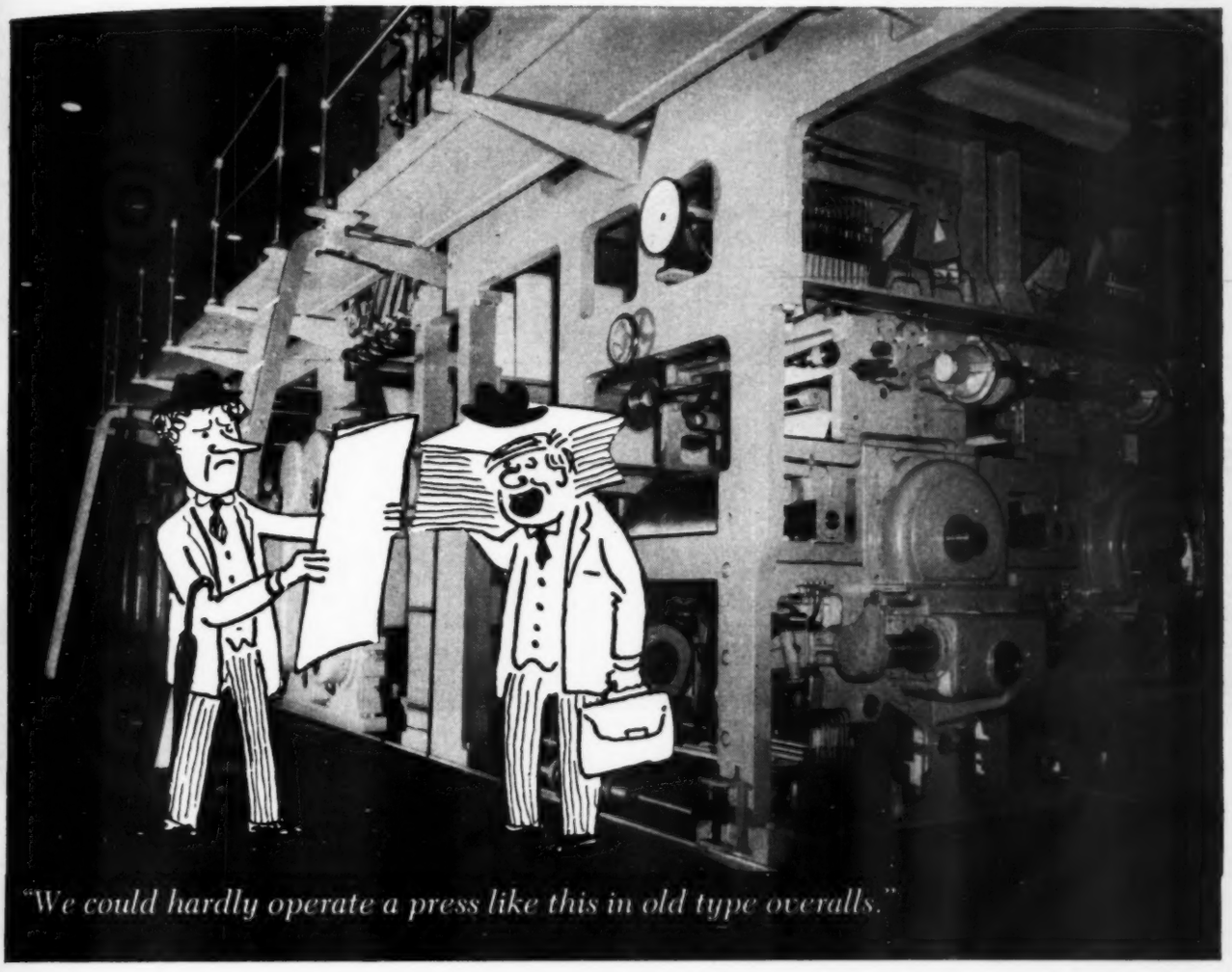

"We could hardly operate a press like this in old type overalls."

SCOTT VICKERS PRESS...

Built for "THE NEWS," Adelaide, Australia, by Vickers-Armstrongs Ltd. London, England

With a circulation of well-over 100,000 daily, and increasing each year, the NEWS, Adelaide, Australia, needed modern high-speed equipment to keep pace with growing needs. They chose SCOTT and had Vickers-Armstrongs (Engineers) Ltd. of London build a press to meet their requirements.

The modern stream lined SCOTT press illustrated was installed in mid year 1957 and prints up to 50,000 papers per hour on a 4 unit press equipped with a "late news" device. A pair of SCOTT floor-fed 3-2 Folders, full impression inking rollers, 36" reel, Witton-James magazine reel system with provision for Witton-James-Wood pasters and 23-9/16" sheet cutter, with 15" cylinder diameter. Electrical Controls and Substructures provide a modern installation for one of Australia's leading newspapers.

SCOTT installations . . . with or without provision for ROP Color . . . are versatile in arrangement and number of units—if *you* have a pressroom modernization problem, let a SCOTT engineer help you solve it.

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For More Information Circle 156 on Reader Service Card

New Cutler-Hammer D-c Press Drives an Control set new standards in operationa efficiency and dependability

New Cutler-Hammer D-c Webmaster Unit Press Drive provides complete unitization and coordination

Those who have seen the new Cutler-Hammer D-c Webmaster in action are saying, "This is by far the most marvelous unit press drive in the market today," and you'll say so, too, when you compare its many outstanding features with any other drive system. Every Webmaster unit has its own source of power, its own heavy-duty silicon rectifiers which provide the D-c current for the drive motor, and its own trouble-free magnetic amplifier type control all enclosed in a heavy gauge steel cabinet. Each Webmaster Unit is completely independent, and yet any combination of units can be grouped to meet changing make-up requirements by simply setting handy selector switches; the combined units then operate in perfect synchronization. Other outstanding features include infinitely variable speed control of the D-c drive motors from threading to running speed . . . "trip-locators" which automatically pinpoint situations needing attention . . . static control components that outlast all others and are easily serviced without specially trained personnel. Write today for detailed information on the world's newest and finest unit press drive system . . . the Cutler-Hammer D-c Webmaster.

For the very latest in D-c unit press drives and con trol, it's the all new Cutler-Hammer D-c Webmaste Every unit is completely independent and yet an number of units can be grouped according to th make-up requirements by simply setting handy se lector switches.

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C-H

CUTLER-HAMMER, Inc.
1460 St. Paul Ave.
Milwaukee 1, Wisconsin

For More Information Circle 47 on Reader Service Card

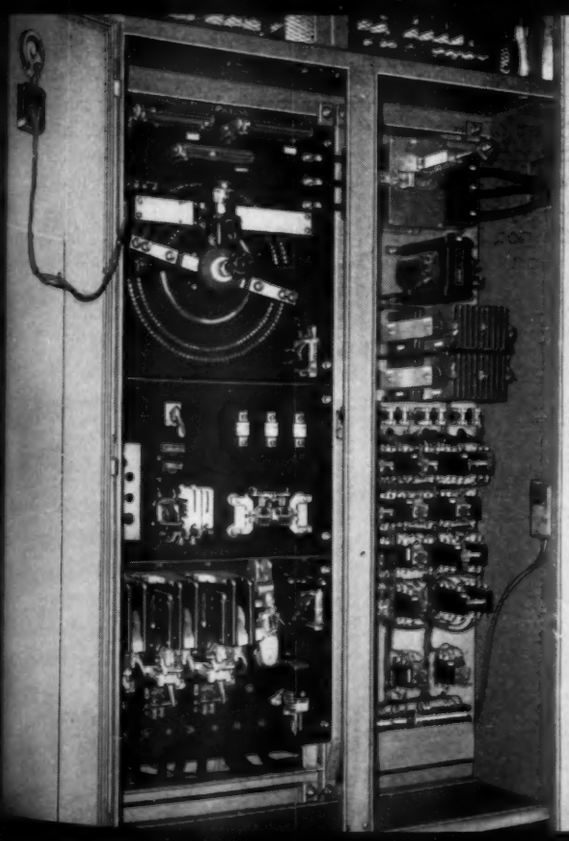
New Cutler-Hammer D-c Group Drive provides ultra-smooth press performance at the Beloit Daily News

Here's important news for all newspaper publishers and engineers . . . the all new Cutler-Hammer D-c Group Drive and Control is setting new records for performance and economy at the *Beloit Daily News*, Beloit, Wisconsin. This revolutionary drive system uses the commercially available A-c power, converting it to D-c with heavy-duty silicon rectifiers which require no special cooling or attention. The 6 unit—1 folder press is driven by two 75 hp D-c motors and the pressmen report excellent speed control all the way from threading speed to top running speed (40,000 iph). By comparison there's nothing on the market to equal this new Cutler-Hammer D-c Group Drive and Control in performance, economy, and dependable operation. Cutler-Hammer D-c Group Drives are available in all sizes through 100 hp. Be sure you have all the facts before installing new presses or remodeling existing facilities. Write today.

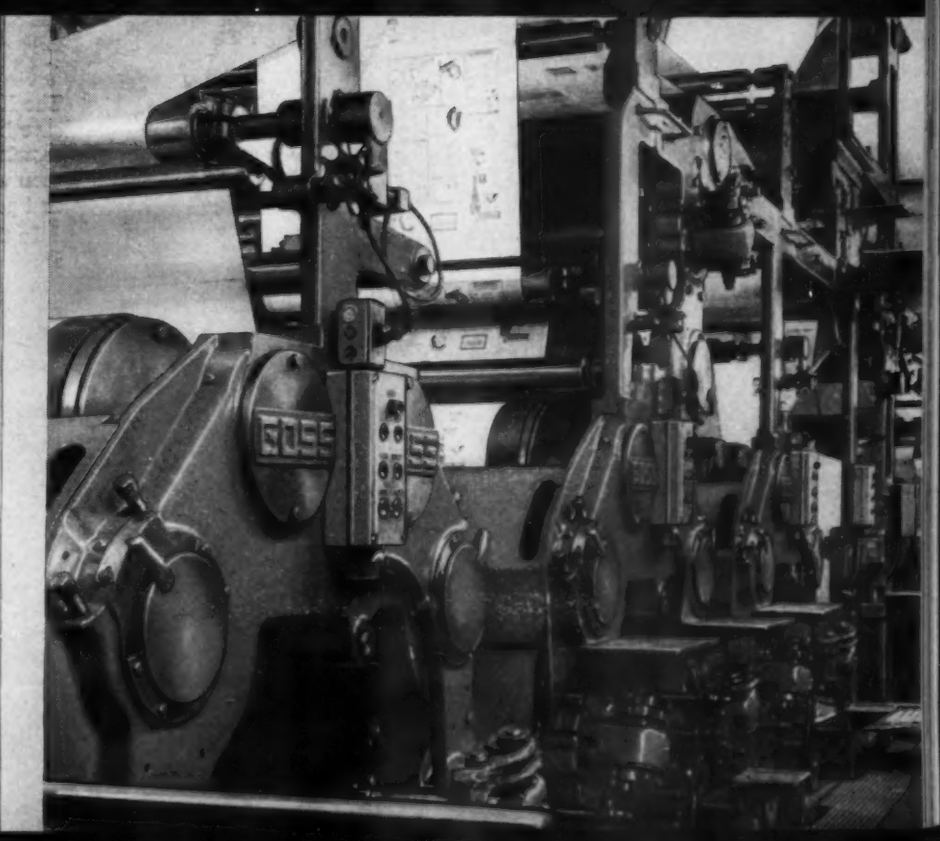
"We are proud to have industry's first magnetic amplifier type D-c drive on our new press installation. The pressmen and I are very pleased with its performance."

W. A. Strong, Publisher,
Beloit Daily News.

The new Cutler-Hammer magnetic amplifier type, adjustable speed, D-c Group Drive and Control provides smooth, trouble-free press performance, and improved efficiency.



Now in daily operation—the new 6 unit—1 folder press at the *Beloit Daily News* is equipped with the all new Cutler-Hammer D-c Group Drive.



EQUIPMENT & SUPPLIES

If you wish additional information concerning equipment, supplies, and/or technical literature, please make your request on *Printing Equipment Engineer's* Reader Service Card found in this issue.

Craw Modern Type Face

American Type Founders Co., Inc. has introduced a new type face called Craw Modern. The new type series is described as a broad, round modern letter, offered in sizes from 6 pt. to 72 pt. Designed by

Craw Modern

CRAW MODE

$1234567890¢

Freeman Craw, art director, Tri-Arts Press, New York, N. Y., it is based in part upon Craw Clarendon. Samples of Craw Modern in all sizes are available from ATF type dealers. Circle No. 283 on Reader Service Card.

Four DuPont Films

Four new photographic films designed to meet registration problems of color separation and correction have been introduced by Du Pont Company.

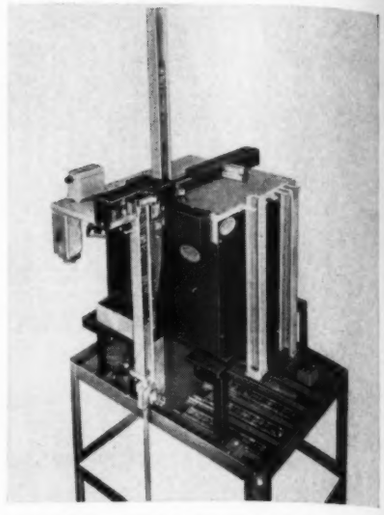
Cronar Pan Litho film may be used for highlight masks in indirect separation of reflection copy, halftone separations in direct separation of reflection copy, and for halftone direct separations from transparent copy. Another film is Cronar Transparency Color Separation Negative. Uses include indirect separation negatives from transparency and reflection copy.

Cronar Reflection Color Separation Negative film is a camera speed emulsion for separation negatives of opaque or reflection copy and for separations from transparent copy when film contrast is lowered by use of soft-working developer. The fourth film is Cronar Pan Masking said to be suited to multiple overlay masking techniques. Circle No. 255 on Reader Service Card.

Matrix Inspection Machine

A machine that automatically inspects Linotype and Intertype matrices, rejecting those which are worn or damaged and do not align accurately, has been developed by Quality Control Corp.

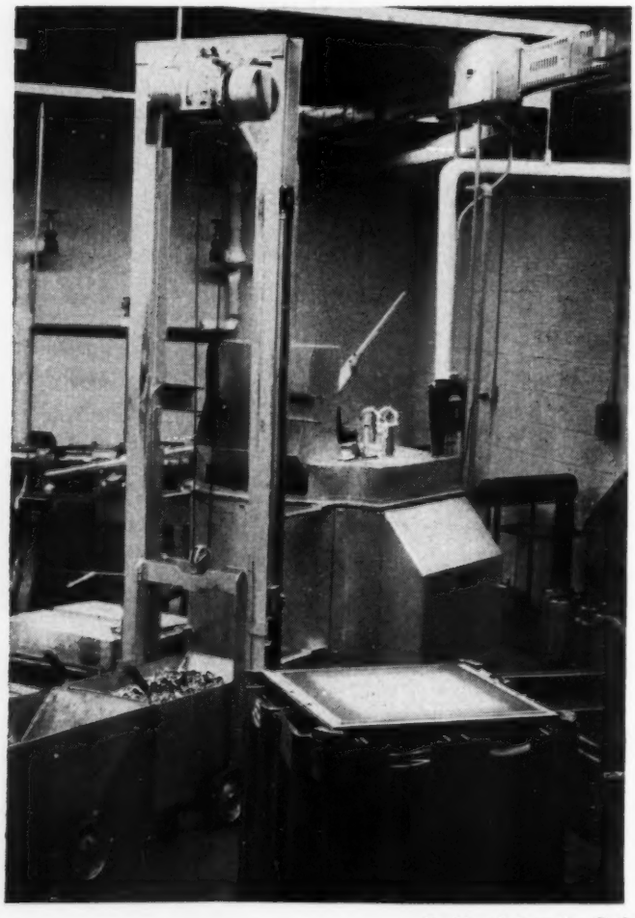
Misalignment of letters in slugs occurs when the main alignment lug has been



worn down by friction so that the matrix drops lower than adjacent ones. This wear is difficult to detect visually without measuring each lug with a micrometer, or casting entire magazines into lines and proofreading in order to discover dropped matrices.

The new machine, called Matri-Chek, inspects mats by electro-mechanical means. According to Quality Control, operator loads matrices into feed magazine of Matri-Chek and starts it. Matrices pass through a measuring device, at a rate of 40 to 50 per min., and worn or damaged matrices are automatically discarded. Circle No. 271 on Reader Service Card.

(*Continued on Page* 16)



Cut labor costs with mechanized remelting . . .

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For More Information Circle 198 on Reader Service Card

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ENLARGES OR REDUCES AUTOMATICALLY. Engraves direct from original copy, no intermediate steps. Reduces or enlarges continuously up to 4 times. Eliminates photo-copying. Produces engravings up 12¾ x 16 inches.

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is the choice of the majority of daily and weekly newspapers from coast to coast:

More than 500 production and equipment items from these and other quality manufacturers:

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For More Information Circle 55 on Reader Service Card

Equipment and Supplies

(Continued from Page 14)

Electric Saddle Stapler

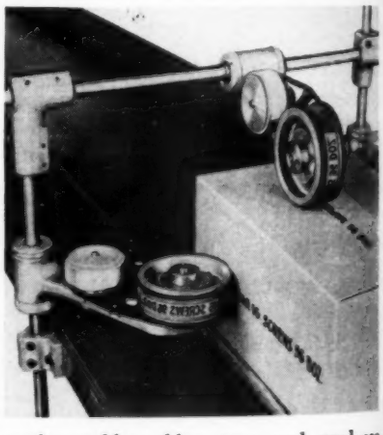
American Wood Type Mfg. Co. has been appointed distributor of Swingline's new electric saddle stapler. Stapler has a saddle and 10 in. deep throat. It uses ¼ in. leg staples and can staple a 120 page book of 60 lb. coated stock, reports sponsor. Device is equipped with a foot pedal and safety guard bar. It is claimed stapler can be set up in tamdem to insert two or more staples at once with one touch of the pedal. Also available is a metal work bench designed to hold the device. Circle No. 250 on Reader Service Card.

Non-offset Powder

Ortman-McCain Co. has announced a non-toxic, non-abrasive, humidity resistant non-offset spray powder, formulated from pure vegetable compounds. Powder is said to flow freely and uniformly providing protection against offset. It has been approved by Graphic Arts Spray Manufacturers. Circle No. 265 on Reader Service Card.

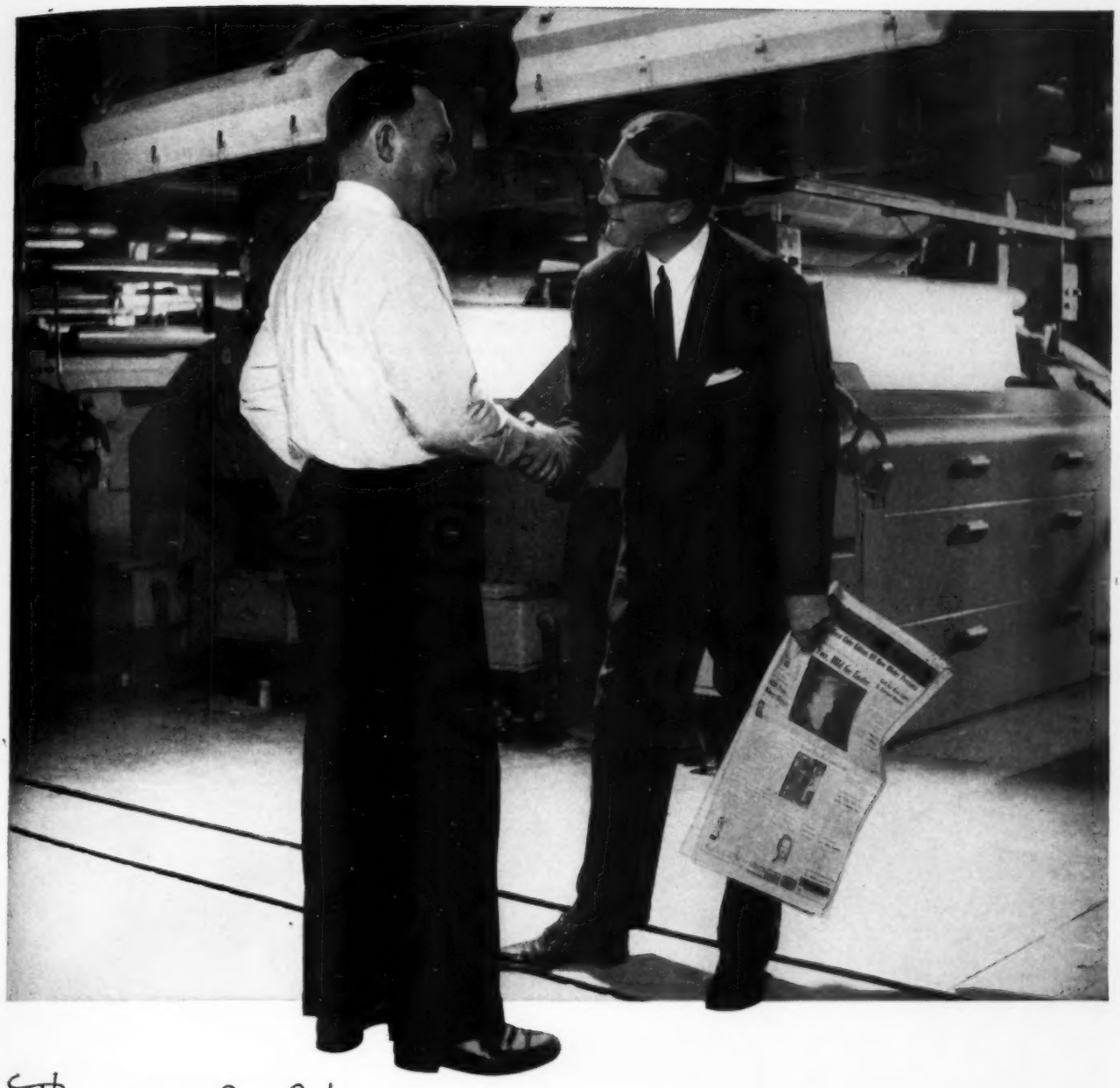
Conveyor Line Markers

A series of conveyor line markers which can be used to imprint data, such as codes, dates and product identification, on products as they move along conveyor lines, has been developed by Wm. A. Force & Co. Known as the Versa-Matic, Model 4 ARC, device utilizes in-



terchangeable rubber type and produces impressions 1 in., 2½ in., and 4 in. wide. Impressions up to 18 in. long can be produced when operating on continuous action, and up to 13 in. long on return actions. Versa-Matic can be mounted at the top or side of conveyor line, as well as in multiple units for wide webs. Circle No. 270 on Reader Service Card.

(*Continued on Page 22*)



The plus of a Hoe press:

BEST USE OF PRESSROOM SKILLS

As a production specialist in the pressroom, you take full pride in your work and want to give it your best. The quality of Hoe-engineered equipment you use insures a good job with less effort.

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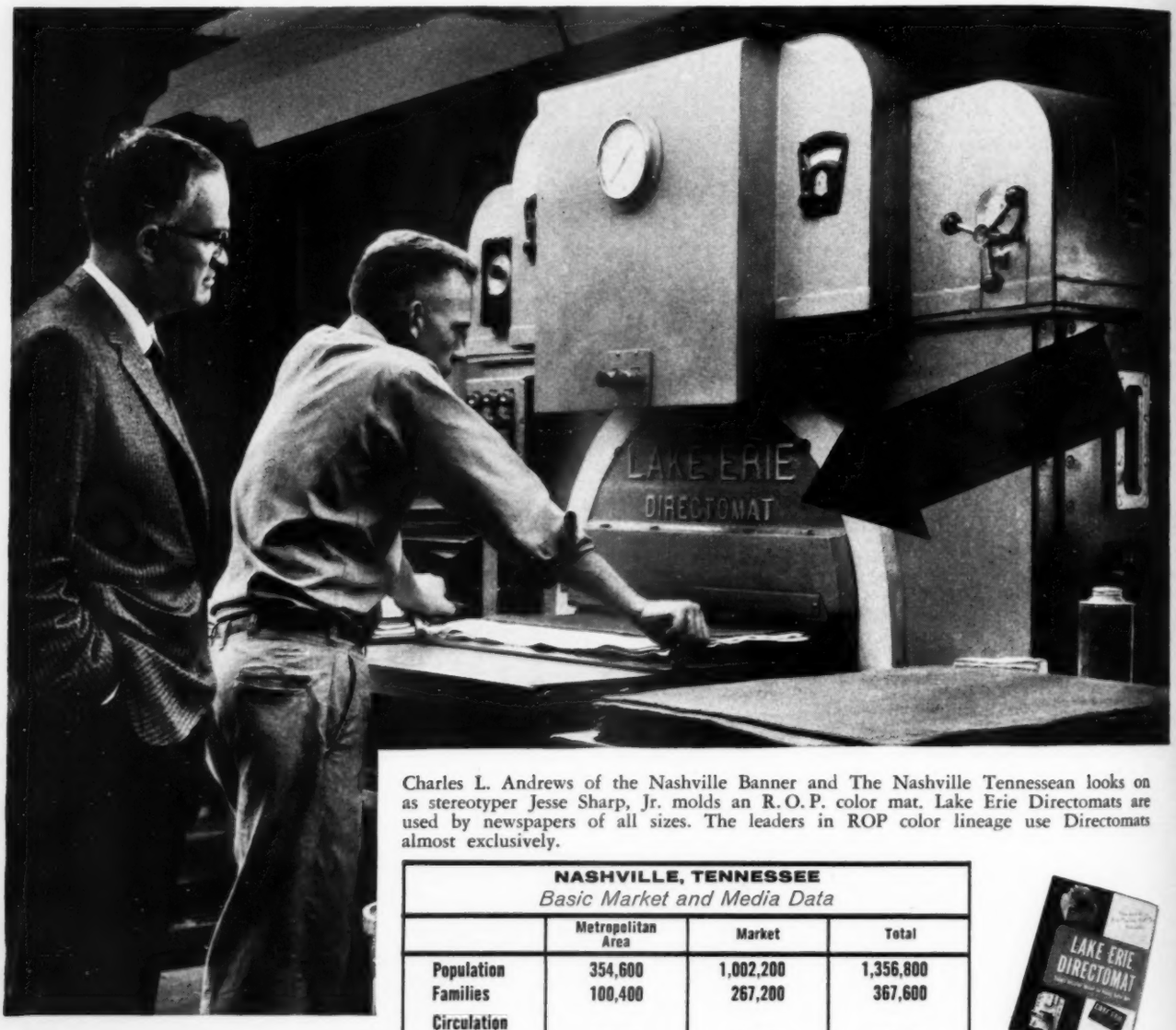
For More Information Circle 87 on Reader Service Card

"Directomat is vital equipment"

says **CHARLES L. ANDREWS** *of the* **NASHVILLE BANNER AND THE NASHVILLE TENNESSEAN**

at the **FIRST R.O.P. COLOR CONFERENCE** *in Chicago, Mr. Andrews said:*

"Our Lake Erie Directomat is one of our most vital pieces of equipment and is used almost exclusively for color. As you know, it is practically impossible to get the same amount of shrinkage in each of the three stereotype mats. Therefore proper color register is quite a problem. With the Directomat, shrinkage is controlled to a point where each mat is in almost perfect register with the others."



Charles L. Andrews of the Nashville Banner and The Nashville Tennessean looks on as stereotyper Jesse Sharp, Jr. molds an R.O.P. color mat. Lake Erie Directomats are used by newspapers of all sizes. The leaders in ROP color lineage use Directomats almost exclusively.

NASHVILLE, TENNESSEE
Basic Market and Media Data

	Metropolitan Area	Market	Total
Population	354,600	1,002,200	1,356,800
Families	100,400	267,200	367,600
Circulation			
Daily	116,124	85,149	201,273
Sunday	91,113	97,448	188,561

LAKE ERIE
HYDRAULIC
PRESSES

➡ Send for Directomat Bulletin 349

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For More Information Circle 100 on Reader Service Card

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For Producing 3 and 4-color Halftone Color Separation Negatives

ALL IN ONE COMPLETE PACKAGE

Today, the Anderson COLOR-SEP UNIT is the most inquired about and discussed equipment of its kind because it answers the need for a practical and reasonably priced method of meeting the increasing demand for reproducing today's perfected color photography. It is a complete package of all equipment necessary for making 3 or 4 color halftone process color separation negatives from small to medium size (35 mm to 5"x 7") transparencies.

FIELD TESTED UNDER SHOP CONDITIONS

More than 3 years of research and testing are incorporated in the COLOR-SEP method and features . . . most of which was carried on in a printing plant darkroom in order to duplicate the actual conditions under which the unit would be used.

FASTER — MORE UNIFORM RESULTS

In the year that it has been on the market, the COLOR-SEP has proved that it not only complements the operator's skill and speed, but also that it makes possible more consistently uniform results. Check the list of COLOR-SEP features and components and you will see why we believe it is the finest specialized equipment in its field. For full information see your supplier or write us direct.

OUTSTANDING FEATURES OF THE ANDERSON COLOR-SEP UNIT:

1. Requires only one screen for all 3 or 4 color halftone negatives.
2. 3 point transparency carriage positioning for identical return after changing masks.
3. Mechanical (pin) register of masks to transparency.
4. Capable of making continuous tone separation negatives from flat reflected copy — to 24" square.
5. Accommodates all transparencies up to 5"x 7".
6. Offers greater versatility with more measuring equipment readily available.
7. Has greater latitude with addition of voltage adjustment features.
8. Constant flash exposure for all separation negatives.
9. Movable platen for exact image composition.
10. Permits image cropping to exact size and shape and automatic positioning of register marks common to all negatives in a set.

IMPORTANT COLOR-SEP UNIT COMPONENTS:

1. Color-Sep vertical type camera-projector mounted on tubular steel stand.
2. Two very fine f/4.5 color corrected lens.
3. Set of five Wratten filters.
4. Gray contact screen 24" diameter. Choice of type and rulings.
5. Kodak comparator light beam type (reflection or transmission) densitometer.
6. Photo electric cell type lightmeter.
7. Stabilized input voltage. Powerstat voltage booster 0 to 135 volts. Rheostat flash voltage control. Voltage indicator. Two automatic motor driven professional reset timers. Complete panel control, built as an attached unit to facilitate maintenance.

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Paul Anderson Manufacturing Co.

P. O. BOX 6705 SAN ANTONIO 9, TEXAS

For More Information Circle 233 on Reader Service Card

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NEW WOOD THERMOMAT*
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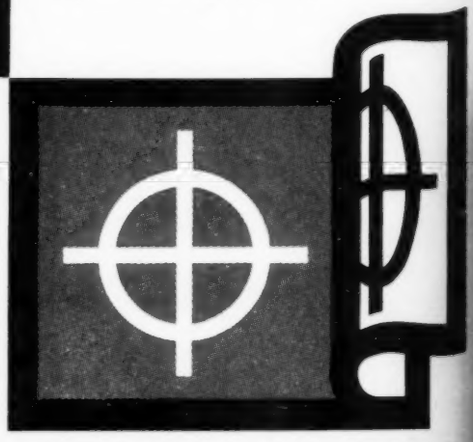
And because there is ABSOLUTELY NO PROGRESSIVE SHRINKAGE IN THE MATRIX . . . 75% LESS FLOOR VARIATION . . . NO PICKING and NO BLISTERING, you get a perfect rubber plate the first time. (And yes, the *hundredth* time, too!)

This means no remolding problems — and *extra* savings on time and labor



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SOUTH-WEST DIVISION
Raymond Sturm
5523 Grand Lake Street
Bellaire, Texas
Telephone (Houston)
Madison 3-7254

WEST-COAST DIVISION
A. W. Johnston
1635 Westhaven Road
San Marino 9, California
Telephone Atlantic 1-4642

G. J. Wirthman
1848 Magnolia Way
Walnut Creek, California
Telephone (Berkeley)
Yellowstone 4-2180

CANADIAN DIVISION
Wyndham Austin
Wood Flong Corporation
of Canada, Ltd.
4298 St. Catherine Street, W.
Westmount Montreal 6,
P.Q., Canada
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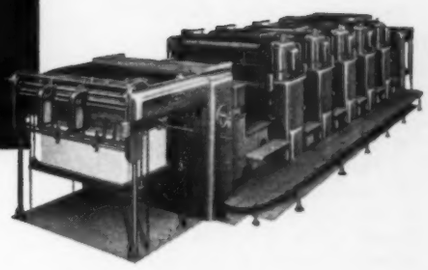
SERVING THE GRAPHIC ARTS INDUSTRY EXCLUSIVELY

For More Information Circle 189 on Reader Service Card

For More Information Circle 117 on Reader Service Card

The Miehle
61 AND 76
LETTERPRESS
ROTARIES



Separate impression cylinders

SAVE TIME IN PLATING AND MAKEREADY...ASSURE FINE QUALITY AND TOP PRODUCTION

In the big, modern 61 and 76 Rotaries, *separate impression cylinders* are one of the main productive advantages of Miehle's Unit Construction design. With individual plate and impression cylinders for each color unit, plating and makeready time are "cut to the bone." Each plate cylinder is declutchable and can be turned free from the press permitting several units to be plated-up at the same time. Built-in gauges aid and assure accurate plate positioning.

Separate impression cylinders provide complete freedom of makeready. No need to purchase costly, high precision plates; pressmen can follow standard flatbed practice of spotting up on an overlay sheet placed under the tympan. The narrow line of impression makes it easy to attain fine quality at the highest speeds. Whatever the field—book, label, carton, publication, commercial—you'll find the Miehle 61 and 76 Rotaries...saving time, reducing operating costs, while stepping up volume and profits.

Write for full details today **MIEHLE PRINTING PRESS AND MFG. CO.**
Division of Miehle-Goss-Dexter, Inc.
Chicago 8, Illinois

Equipment and Supplies

(Continued from Page 16)

Lettering Templet

A templet which can be used to outline letters as well as fill in letters has been announced by Varigraph Company for use with its lettering instruments. Known as the Fill-in templet, it is furnished with double engraved letter grooves. Outer groove is engraved deep for outlining letters with a fine line pen and fine stylus. Inside groove is engraved shallow for filling in letters with a wide pen and wide stylus. Letters ranging in size from 6 pt. to 72 pt. may be produced from one templet. Lettering may also be condensed or extended to fit desired areas. Many lettering styles are available. Circle No. 253 on Reader Service Card.

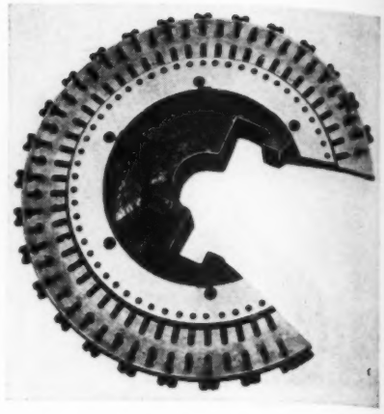
Improved Klimsch Camera

The improved Klimsch super Autohorika camera is now equipped with flexible controls for image centering and oscillating movements in copyholder and transparency holder. The camera is handled in this country by Repro Graphic Machines, Inc.

Copyholder carriage has been redesigned to overrun the bearing block for the autofocusing spindles, resulting in a gapless manual focusing range for auxiliary lenses. Automatic focusing range can be increased to 3X enlargement and 7X reduction with 24 in. lens, or 2X enlargement and 5X reduction with 32 in. lens. For more efficient back lighting of color transparencies, an additional twin-arc lamp with arm for mounting on copyholder carriage is available. Circle No. 259 on Reader Service Card.

Wheel Prevents Marks on Sheets

W & W Tool & Die Co. has announced a delivery wheel which it claims eliminates the problem of delivery wheel marks and streaks appearing on offset printed sheets. Called No Mark delivery wheel, it can be adjusted to skip over any part of the printed sheet, reports W & W. The device is fashioned from a standard size delivery wheel and ½ in. of the wheel diam. is machined off. An aluminum circular disc is then bolted to the side of the wheel. Disc is used to hold individual nylon segments which can be raised or lowered. When raised, diameter of the delivery wheel is the same as it was before machining. When it is necessary for wheel to skip over the inked portion of a sheet, pressman can lower those segments of the wheel that would otherwise make contact with the ink. Whether raised or lowered, segments are locked in position by means of a spring-loaded ball. Circle No. 284 on Reader Service Card.



Printable Plastic Film

An adhesive-backed transparent plastic film which is flexible and suitable for printing emblems, signs, labels and nameplates, has been developed by Minnesota Mining and Mfg. Co. Called No. 639 Transparent Scotchcal brand film, it can be printed by letterpress, offset or screen

(*Continued on Page 28*)

LET A
Capco
REWINDER
HELP YOU

SAVE NEWSPRINT!

With the tight market and high cost of newsprint today, why not let a CAPCO rewinder save you from two to four rolls of usable newsprint a day that is now going as core waste, and being sold as white waste or cut up for copy paper? More than ever today more newsprint means more advertising linage.

Get complete details on the "newsprint saver" from

CAPITAL TOOL
and Manufacturing Co.
5008 Calvert Rd., College Park, Md. Phone UNion 4-7677

For More Information Circle 28 on Reader Service Card

REALLY LOCKS

Roll-Wound Paper

Efficiency Expansion Chucks

In one operation, lever the cam and lock it. It won't slip —ever. Unwind, rewind, or brake easily. There are efficiency expansion chucks for either fibre or steel cores up to ten inches in diameter—for shafts of 1" to 3½" in diameter in graduations of 1/16".

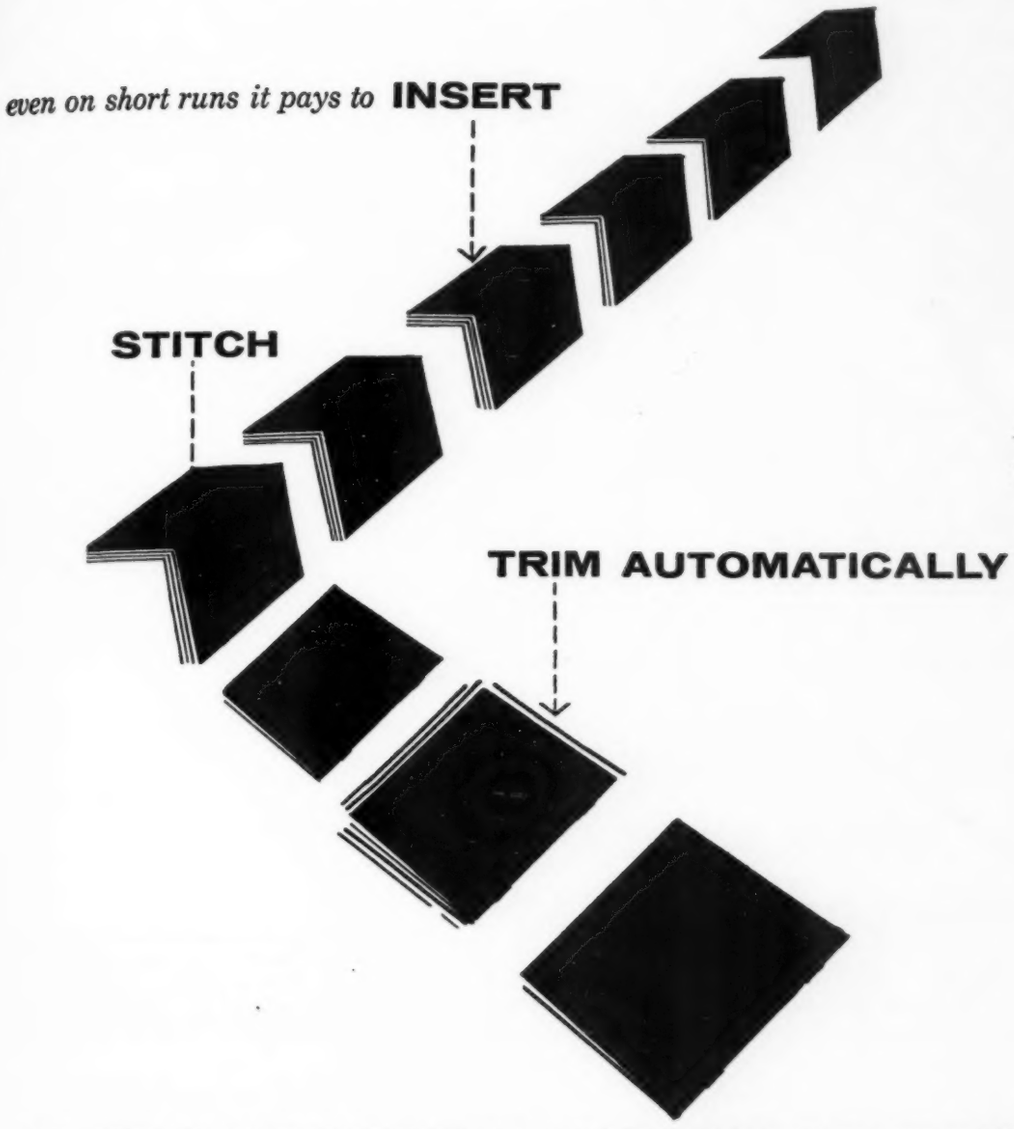
Chucks are inter-changeable—no rights or lefts. Give years of service—made of malleable high strength castings. Surfaces which contact core are precision machined. Lever action applies powerful force to the expansion jaws. Ribbed jaws bite firmly into core, eliminating core slippage when starting or changing speeds, even under extreme brake tension.

Write for the full time and money saving facts to—

VALLEY MFG. CO. Valley, Nebraska

For More Information Circle 197 on Reader Service Card

(ANOTHER MODERN **DEXTER** COMBINATION FOR BETTER BINDING)



DEXTER'S McCAIN-CHRISTENSEN COMBINATION makes your saddle stitching and trimming operation *completely automatic.* You get all the advantages of continuous inserting, stitching and trimming when you team a Christensen High Speed Gang Stitcher with McCain Automatic Signature Feeders and a McCain Automatic 3-Knife Trimmer. Then watch output shoot up—automatic saddle binding will almost double your fastest manual production records. This is true even on runs as short as 1,000—it's so easy and fast to set-up and changeover on the McCains!

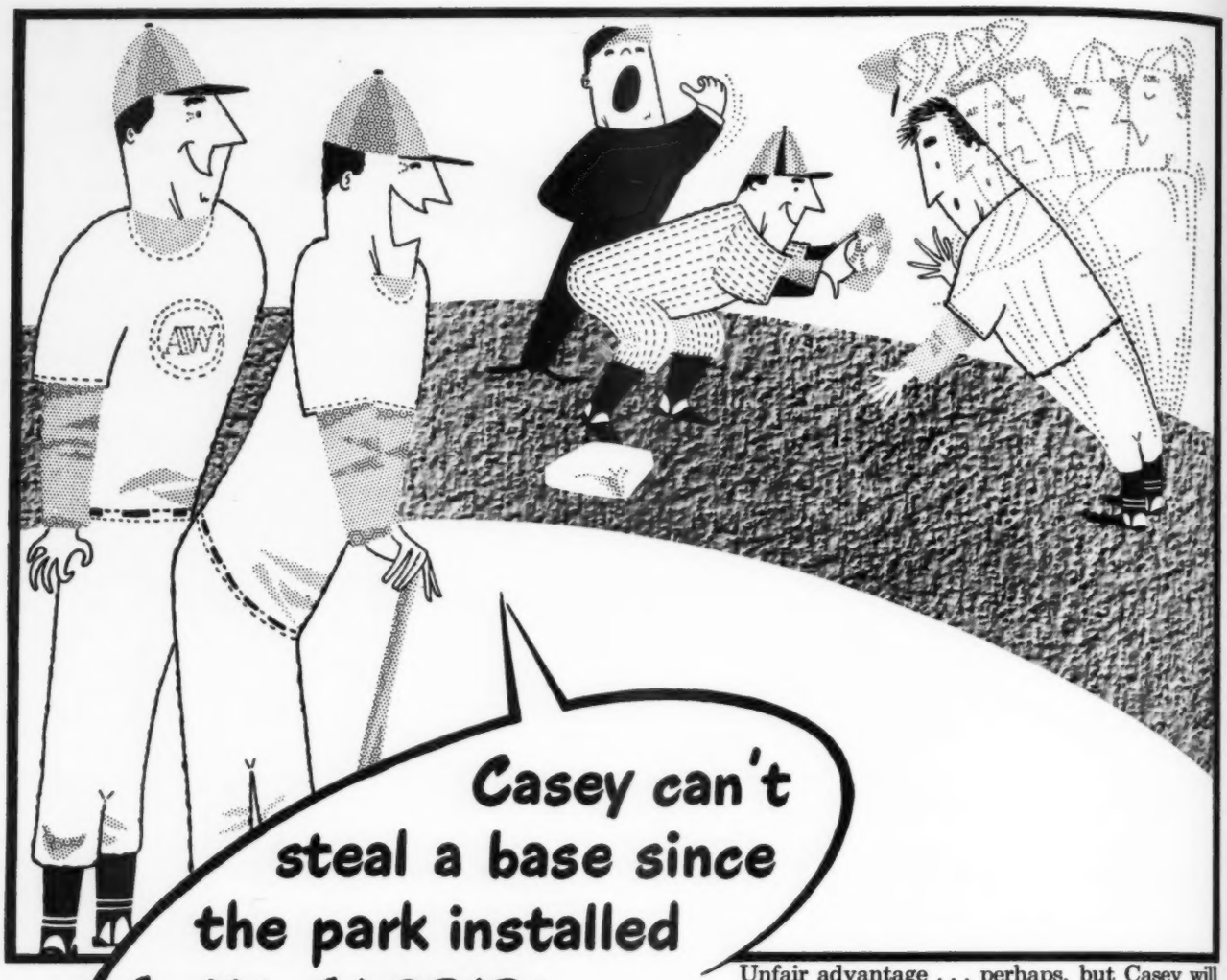
The savings in time and money are impressive—we'll be pleased to project a cost analysis for your own plant. No obligation, of course.

It pays to mechanize your saddle binding operation. After folding . . . insert, stitch, trim *automatically* with Dexter's McCain-Christensen Combination . . . then ship.

Write for new, informative 12-page book, "Three Steps Toward Automatic Saddle Binding."

The **DEXTER** Company
A Division of Miehle-Goss-Dexter, Inc.
PEARL RIVER, NEW YORK

For More Information Circle 49 on Reader Service Card

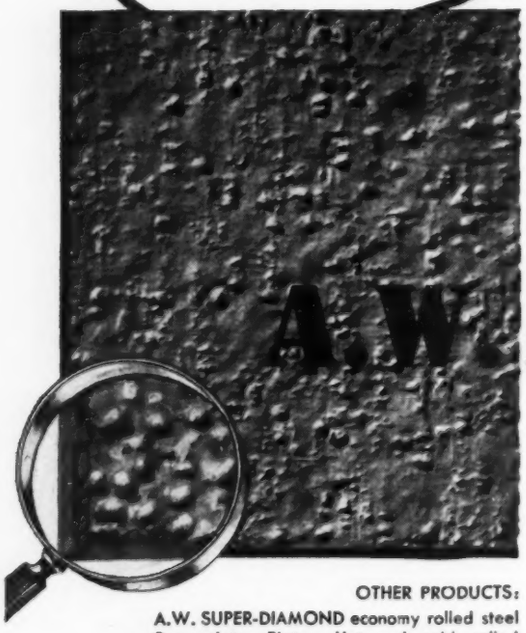


Unfair advantage . . . perhaps, but Casey will never set a new base-stealing record in this park. Now his sliding days are over! A.W. ALGRIP eliminates sliding or slipping wherever used . . . especially where sliding or slipping is never welcome . . . in *your* plant.

A.W. ALGRIP Rolled Steel Floor Plate provides super-safe footing under the most hazardous slipping conditions—on flat or even inclined surfaces.

A.W. ALGRIP Rolled Steel Floor Plate is made by a patented process in which a grinding wheel type abrasive is rolled—*not coated*—to a controlled depth, as an integral part of tough steel plate. Wear merely exposes more abrasive . . . safety lasts for the life of the installation.

Check your plant for slipping hazards and watch Accident Rates and high Insurance Costs "slide." Use A.W. ALGRIP as an independent flooring or as flooring overlay. Send the coupon for A.W. ALGRIP information, today.



A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE

ALGRIP—*approved for safety by Underwriters' Laboratories*

ALAN WOOD STEEL COMPANY
Conshohocken, Pa.

Please send A.W. ALGRIP Booklet AL-E30

Name_____

Title_____

Company_____

Address_____

City_____ Zone_____ State_____

OTHER PRODUCTS:
A.W. SUPER-DIAMOND economy rolled steel floor plate—Plates—Hot and cold rolled sheet and strip—(Alloy and Special Grades)

For More Information Circle 4 on Reader Service Card

A Xerographic Head designed to take a standard xerographic plate. Complete with ground glass.

B Prismatic Head makes right reading photocopies to any size on film or paper in one shot.

C Standard Head holds film for making line and halftone negatives.

Right Reading Photocopies . . . Xerographic Exposures . . . Line and Halftone Negatives . . . All from the Versatile Kenro Camera

The Xerographic Head and Prismatic Head added to the precision built Kenro Camera make it the most versatile camera available today. Application of these accessories is varied, simple and useful.

The Xerographic Head (A) permits you to make fast easy xerographic plate exposures. It has a simple adjustment that allows uniform gripper margins on the plate, eliminating time consuming press cylinder adjustments.

With the Prismatic Head (B) you can make *reproduction quality* right reading photocopies, negative or positive, on film or paper, in one shot, enlarged to 4X, reduced to half size. Color too, can be shot using direct color print material.

With the Standard Head (C) you can make line negatives up to 14" × 18" and halftone negatives by Magenta or Autoscreen methods. Enlarges 3X, reduces to 1/3 with standard Goerz lens.

The Kenro "Vertical 18" Camera is the result of years of experience designing and perfecting a precision camera, built on the rigid and economical vertical principle. Each camera is individually aligned at the factory and is delivered fully assembled. Focusing and sizing are done with pin point accuracy using counters and micro dials which also permit hairline resetting. The reflector flood lights supply flat uniform instant lighting. Exposures are controlled by an automatic reset synchronous timer which permits any desired exposure from three seconds to 3 minutes. The heart of any fine camera is, of course, the lens. The Kenro Camera uses a diaphragm equipped Goerz color corrected lens, the standard of quality throughout the graphic arts field.

The Kenro "Vertical 18" Camera, complete with Goerz lens, lights, and standard head costs only $1250 f.o.b. Chatham, N.J. Xerographic and Prismatic Heads, Vacuum Back and extended range lenses are optional extras. Send the coupon for complete details.

KENRO GRAPHICS, INC., Dept. G-5
25 Commerce Street, Chatham, N.J.

KENRO GRAPHICS, INC., DEPT. 6-5
25 Commerce St., Chatham, N.J.

Please send full information. I am interested in making:

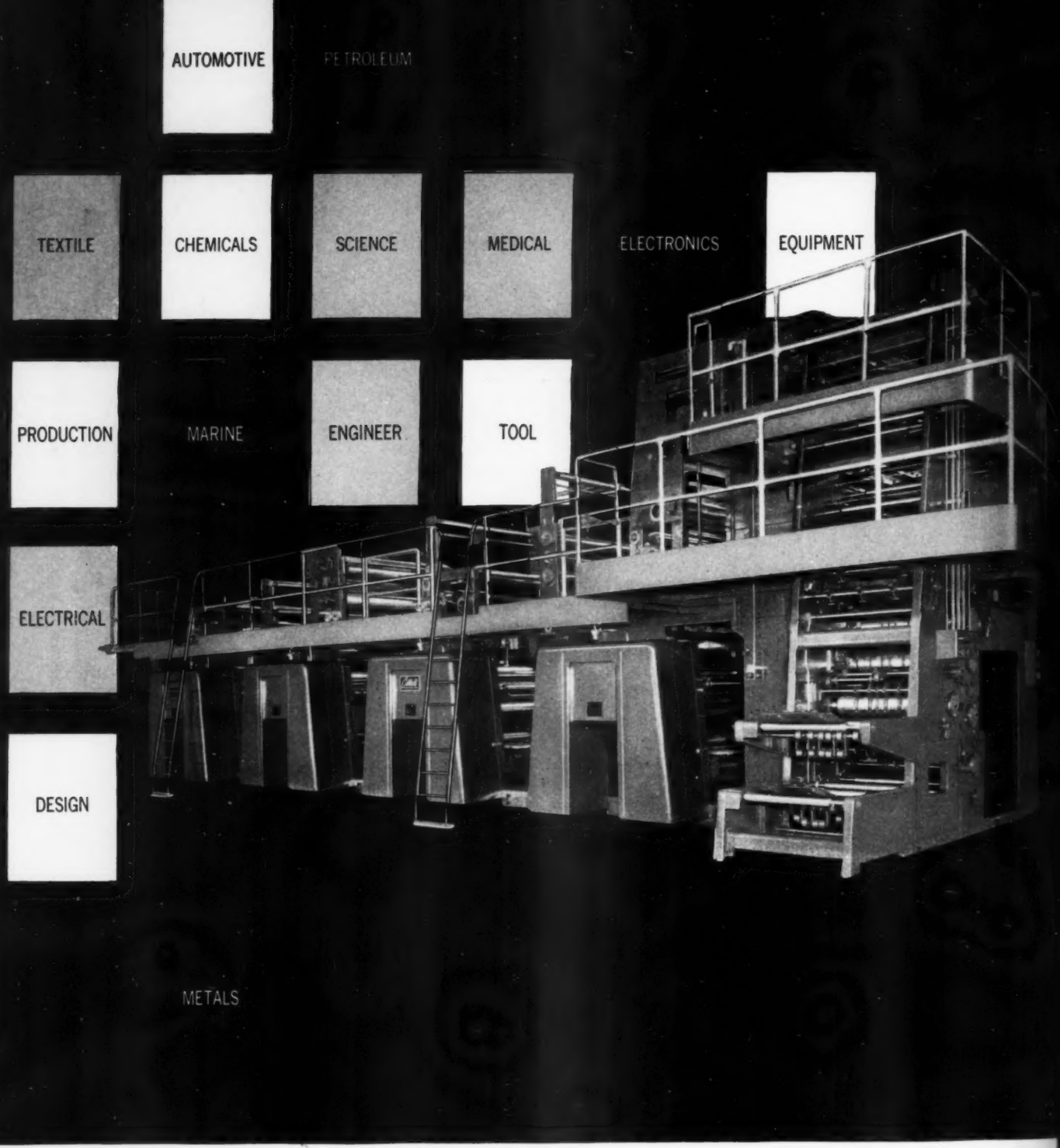
- ☐ *Line and halftone negatives*
- ☐ *Xerographic exposures*
- ☐ *One shot photocopies*
- ☐ *I would like a demonstration*

NAME _____

COMPANY _____

ADDRESS _____

For More Information Circle 97 on Reader Service Card



Web-fed short-run letterpress cuts 2 to 3 days from trade magazine printing schedule

Here's a press YOU can use . . . a press engineered for trade magazines with circulations of 30,000 or better, and 32 pages or more . . . with two colors on *every* page if you want it.

And you get a choice of Cottrell folders to give you just about any make-up you could ask for.

Because this is a web-fed press, you can get up to 16,500 two-color impressions per hour at 800 f.p.m. . . . four times faster than sheet fed rotary . . . eight times faster than flat bed. You could extend your deadlines as much as three days!

This press can grow with your business — This Cottrell is built on the unit principle. If your business demands it, you can add additional units at modest cost.

The basic press, in either 32-page or 64-page models, consists of two or four two-color units, printing two colors on each side of one or two webs respectively. Folder handles signatures from four to 64 pages.

Let's be practical — Neither you nor we can tell without some study just how well this new Cottrell press could fit into your growth plans. We'd like to help you find out. A telephone call to Pawcatuck, Connecticut 5-5731 will get things started.

HARRIS INTERTYPE CORPORATION

THE COTTRELL COMPANY

A Subsidiary of Harris-Intertype Corporation

Westerly, Rhode Island

FREE—Would you like a large two-color reproduction of this illustration by Ken Fagg suitable for framing? Just drop us a line and ask for your free print of "Navy Diver".

Faithful reproduction depends on the quality of processing solutions

Powderdot is a special two-component, formaldehyde type developer which provides highest possible contrast, crisp dots, better line resolution and has an exceptionally long tray life.

Companion in the darkroom is Chemco's non-corrosive Power-Fix which clears negatives three times faster than conventional "hypo" baths and lasts days longer. Easy to mix. Now comes packed in economical 5-gallon, plastic cubitainers which are easy to use, safe, unbreakable and assure product purity.

Ask us to demonstrate the superiority of both of these solutions. They are the result of 34 years of constant research by Chemco . . . manufacturer of uniformly fine film, chemicals, cameras and equipment solely for photomechanical reproduction.

chemco

CHEMCO PHOTOPRODUCTS CO., INC.

Main Office and Plant—Glen Cove, N. Y.

Atlanta Boston Chicago Dallas
Detroit New Orleans New York

For More Information Circle 40 on Reader Service Card

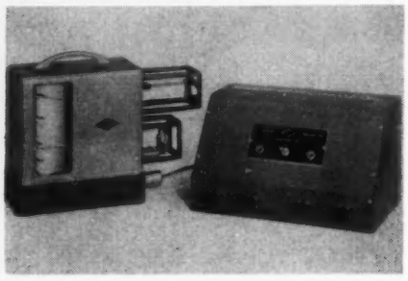
Equipment and Supplies

(Continued from Page 22)

process. Pressure sensitive adhesive on the back sticks at a touch to any clean surface, reports 3M. It is said printed copy on the film has the effect of cut out letters eliminating the need to match background colors. Copy can also be printed reverse. It can be applied to either the inside or outside of doors. Circle No. 256 on Reader Service Card.

Humidity and Temperature Recorder

A variable range humidity and temperature recorder controller is available from Serdex, Incorporated. The two sec-



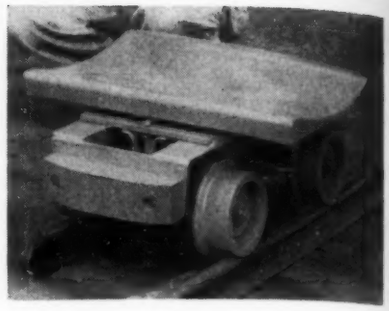
tion instrument is said to provide humidity readings accurate to ±3% R. H. within its operating range of 15% to 95% R.H. at temperatures from +32 deg. to +130 deg. F. Temperature readings are claimed to be accurate to ±1 deg. F. over a range of 0 deg. to 100 deg. F. Direct reading or recorded humidity and temperature readings and control limit lines may be taken through the indicator window in the sensing section. Control range for each condition is determined by locating recording chart electrical contact blocks on a positioning post in the section Circle No. 252 on Reader Service Card.

Type of the Month Club

American Type Founders Co.'s Type of the Month Club selection through May 20 is a set of six complete fonts of 18 pt., 36 pt., and 60 pt. Craw Clarendon and Craw Clarendon Book. Companion selection is eight complete fonts of 18 pt., 24 pt., 30 pt., 36 pt., 42 pt., 48 pt., 60 pt., and 72 pt. Century Expanded Italic, or, if desired, Century Expanded Roman. Circle No. 263 on Reader Service Card.

Paper Roll Truck With Swivel Top

A flat wing swivel top paper roll truck designed to speed up delivery of paper to roll fed presses has been introduced by Easton Car & Construction Co. On the truck, paper roll can be turned easily to correct loading position. It will handle a 3200 lb. roll, 40 in. diam. Swivel top turns on a 13 in. diam. ball turntable. Pedal operated spring tensioned locking

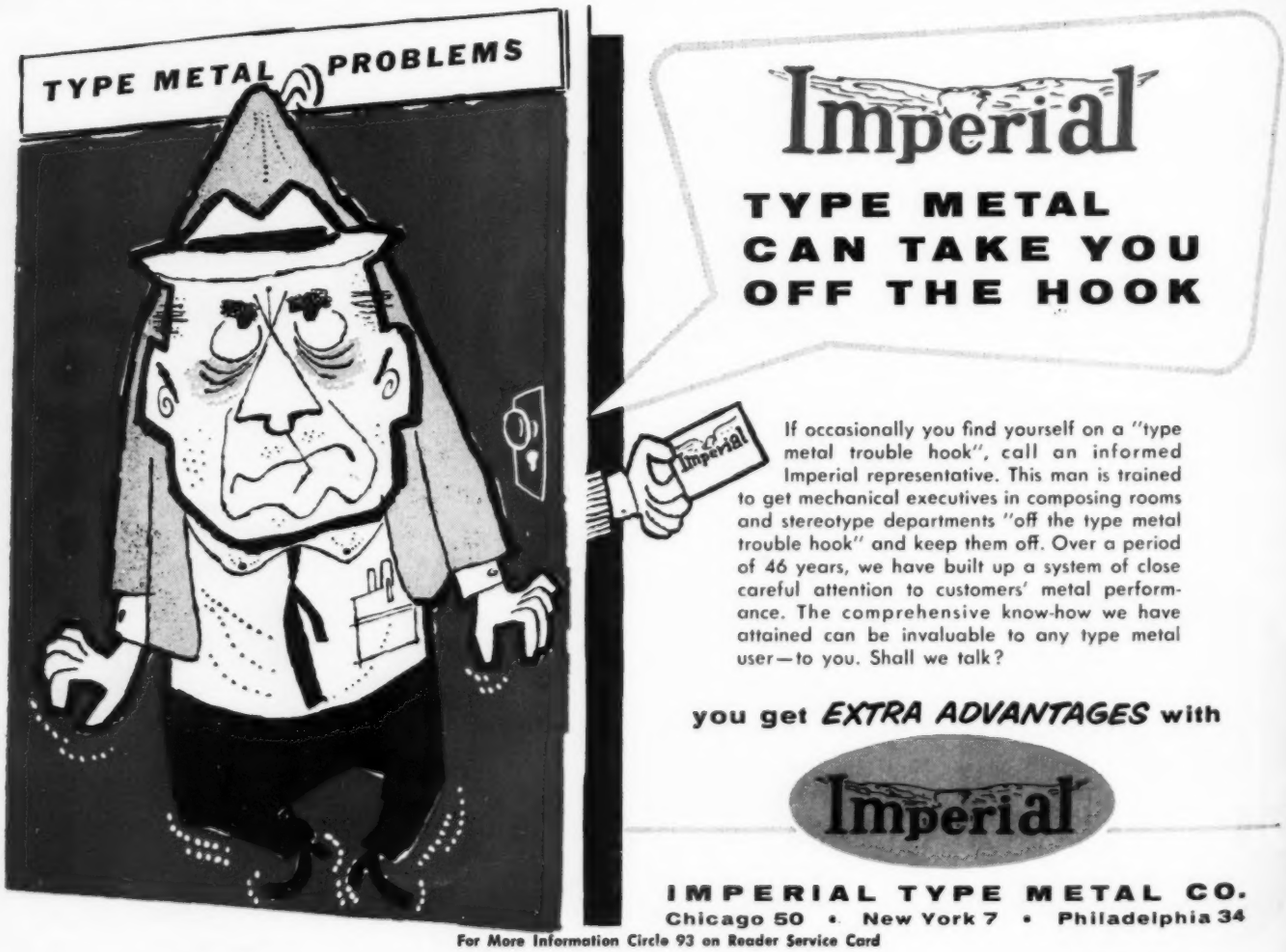


device which can be operated from either side, locks the top at every 180 deg. turn. Car is 16 in. by 30½ in., and 10¾ in. high from rails to the top. Circle No. 251 on Reader Service Card.

Device for Business Forms

The Linearscope, an electronic device for measuring the spacing between line hole punching performed on rotary web business forms presses, has been announced by Orville Dutro & Son, Inc. Device is used to measure spacing at speeds up to 750 ft. per min., automatically holding variations below 1/64 in. and correcting errors electronically. It is claimed to provide a meter reading which enables pressman to hold spacing at minimum variations. At present, Linearscope is available only to Speedflex press owners and purchasers of new Speedflex equipment. Circle No. 280 on Reader Service Card.

(*Continued on Page 64*)


TYPE METAL PROBLEMS
Imperial
TYPE METAL CAN TAKE YOU OFF THE HOOK
Imperial
If occasionally you find yourself on a "type metal trouble hook", call an informed Imperial representative. This man is trained to get mechanical executives in composing rooms and stereotype departments "off the type metal trouble hook" and keep them off. Over a period of 46 years, we have built up a system of close careful attention to customers' metal performance. The comprehensive know-how we have attained can be invaluable to any type metal user—to you. Shall we talk?
you get EXTRA ADVANTAGES with
Imperial
IMPERIAL TYPE METAL CO.
Chicago 50 • New York 7 • Philadelphia 34
For More Information Circle 93 on Reader Service Card

but oh so heavy-handed with forms

She doesn't mean to be so destructive—but she often *is*, and we may as well recognize the fact. It's true that business forms, while they must be economically purchased, must survive all the routing and thoughtless handling and filing and re-filing to provide a lasting and sometimes permanent business record.

It's a case for the proper selection of paper for forms, no foolin'! It's a case, too, for MAXWELL BOND. It's inexpensive, and designed expressly for this type of business printing. It's made to stand up better than many more expensive papers, watermarked to show we're proud of it.

Maxwell Bond

America's Favorite Low-Cost Bond

We'd be pleased to show you samples of MAXWELL BOND's six colors, four weights and six finishes. Just send your letterhead.

HOWARD PAPER MILLS, INC. • MAXWELL PAPER COMPANY DIVISION • FRANKLIN, OHIO

For More Information Circle 199 on Reader Service Card

HELPFUL LITERATURE

FOLDERS · Sales Aids · Instruction Sheets · BULLETINS · Catalogs · BOOKLETS · Brochures

Circle Numbers on Reader Service Card in This Issue

Keep Yourself Informed. The folders and bulletins listed below all pertain to modern equipment, supplies, processes and/or methods. These have been prepared especially for plant managers, superintendents and foremen. Please circle the numbers on the Reader Service Card in this issue for the bulletins you wish to receive. Drop the self-addressed card in the mail. *Printing Equipment Engineer* will forward your request.

Composing Room

STAR QUADDERS

An eight page bulletin regarding the Star Selectro-Matic quadder is offered by Star Parts, Inc. Simplicity of design is said to be a feature of the quadder. Circle No. 306 on Reader Service Card.

PAGE STORAGE CABINET

Hamilton's electric page storage cabinet is discussed in Catalog No. 28, available from Hamilton Manufacturing Co. Cabinet will store 20 full size pages. Elevator shelf operates on standard 110 v., a.c. Circle No. 321 on Reader Service Card.

V-BELT MOTOR DRIVE

Star Parts, Inc. has issued a folder concerning its V-belt motor drive for linecasting machines. Drives are available for speeds from 6 to 12 lines per min. Pulleys run on graphite-bronze bearings which require no lubrication. Circle No. 320 on Reader Service Card.

ALIGN-A-MAT

Literature regarding the Fisk Align-A-Mat is available. Device is used to restore worn out mats to factory standards. It is said distributor stops due to lugs worn short will be eliminated. Circle No. 326 on Reader Service Card.

AMSCO CATALOG

Amsco steel and aluminum chases are described in a catalog issued by American Steel Chase Co. Chases are said to be square and true because they are patterned from a template or blue print. Circle No. 327 on Reader Service Card.

LUDLOW TYPEFACES

Specimen sheets have been prepared by Ludlow Typograph Co. to show its new Tempo bold extended and Tempo black extended typefaces. Black extended is offered in 12 pt., 14 pt., 18 pt., 24 pt., 30 pt., 36 pt., and 48 pt. and bold extended in 18 pt., 24 pt., 36 pt., and 48 pt. Circle No. 310 on Reader Service Card.

PRE-PRESS EQUIPMENT

Vandercook pre-press equipment is the subject of literature released by Vandercook & Sons, Inc. Illustrations and descriptions of proof presses, test presses, gauges and other equipment are contained in the bulletin. Circle No. 337 on Reader Service Card.

CARBIDE CUTTERS

American Wood Products & Tool Supply offers a catalog in which is contained information about carbide tipped saw blades and tungsten carbide tipped cutters for Pony Autoplates. Circle No. 322 on Reader Service Card.

HAMMOND GLIDER

Trim-O-Saw Bulletin 958 descriptive of the Hammond G-100 Glider has been published by Hammond Machinery Builders, Inc. Features are said to include an all purpose saw guard, chip and waste disposal, and a micrometer gauge. Circle No. 330 on Reader Service Card.

MATRIX REFERENCE MARKS

Matrix Contrast Service has published a booklet describing its matrix maintenance plan. Black and white and color reference marks are utilized in the plan. Circle No. 318 on Reader Service Card.

MOHR SAW

Mohr Lino-Saw Co. has prepared a booklet entitled *Cutting Composition Costs*, to describe the Mohr saw. Illustrations are included. Device is used to saw slugs automatically to any measure. Circle No. 325 on Reader Service Card.

ROUSE CATALOG

H. B. Rouse & Co. has issued a catalog in which is described its mitering machines, lead and rule cutters, composing sticks, type mortiser, slug clippers, band saws and other equipment. Circle No. 314 on Reader Service Card.

SAW TRIMMER

Morrison Company's Model 3-A saw trimmer is discussed in a catalog offered by the company. Among features of trimmer are: Behind-the-gauge workholder, 73 pica gauge, miter and line-up gauge, saw grinding attachment with Universal saw blade, and right and left hand miter vise. Circle No. 315 on Reader Service Card.

Platemaking

KENRO VERTICAL 18 CAMERA

The Kenro Vertical 18 camera is discussed in an eight page, two color bulletin prepared by Kenro Graphics, Inc. Illustrations and descriptions of the firm's xerographic head for xerographic processes and its prismatic head which produces positive or negative, right reading photocopies in one shot, are furnished. Circle No. 336 on Reader Service Card.

PROTYPE FOLDER

The method of setting type and lettering photographically is explained in a folder available from Mergenthaler Linotype Co. and Davidson Corporation. Protype is offered in 10,000 type styles and sizes, 6 pt. to 90 pt. It is suitable for ads, layouts, magazines, posters, and bulletins. Circle No. 323 on Reader Service Card.

PHOTOMECHANICAL EQUIPMENT

Literature has been released by Lanston Monotype Co. to describe its photomechanical equipment. Included in the line is the Lanston Camerama, Magnastep step and repeat machine, vertical plate coating machine, dot etching table, layout and stripping tables, horizontal litho plate whirler, and vacuum printing frames. Circle No. 311 on Reader Service Card.

ETCHING MACHINE

The Dow-Chemco powderless etching machine, Model 510, is described in a four page bulletin released by Chemco Photoproducts Co., Inc. Machine is used to produce line, halftone and combination engravings on zinc and magnesium by powderless etching methods. Circle No. 346 on reader Service Card.

CONTACT SCREENS

A price list and descriptive folder regarding Universal contact screens have been released by Caprock Developments. Sizes range from 8 in. by 10 in. to 23 in. by 29 in. Angle-ruled screens are also available. Circle No. 329 on Reader Service Card.

ROLL FILM CAMERA

Literature is available from Chemco Photoproducts Co. Inc. regarding its Model F-1212 roll film camera for lithography. By turning a selector dial, the right length of film, from one of three rolls stored in the roll film magazine, is automatically placed in proper shooting position. Circle No. 313 on Reader Service Card.

TWIN PLATE ROUTERS

A descriptive bulletin has been issued by Sta-Hi Corporation to describe its twin plate router. Machine is designed for ease of operation and is equipped with many safety features, reports Sta-Hi. Circle No. 307 on Reader Service Card.

MOSSTYPE RUBBER PLATES

A sample book of Mosstype Corporation's rubber plates with stock designs suitable for decorative background printing is available from the firm. Plates may be used for printing on wrappings, bags, cartons, case liners, envelopes and other convertible paper and film products. Circle No. 343 on Reader Service Card.

Pressroom

LITHOGRAPHIC ROLLERS

Ideal Roller & Mfg. Co. has released an attractive four page, two color bulletin regarding its lithographic rollers. Descriptions of Masterlith, Graytone and Lithocraft rollers and Ideal's Plast-O-Damp system are given. A list of the firm's sales offices is also furnished. Circle No. 334 on Reader Service Card.

RUBBER PLATE PRESS

Rubber plate printing is described in an eight page booklet regarding the ATF Flexo-Jobber, available from American Type Founders Co., Inc. Press is designed for high speed printing in four colors on paper or light card stock. Up to 8000 four color sheets, 12 in. by 17 in., may be run in one hour. Circle No. 347 on Reader Service Card.

PRESSMAN'S GUIDE

A pressman's guide for running 3M all aluminum photo-offset plates has been prepared by Minnesota Mining and Mfg. Co. Tips on packing, mounting and handling the plates, ink considerations, press pressure, storing the plates, etc. are given in the attractive guide. It is designed for mounting on a wall. Circle No. 348 on Reader Service Card.

RAISED PRINTING MACHINE

Information and samples regarding Virkotype raised printing equipment can be obtained on request from Virkotype Corporation. The Model G-30 automatic raised printing machine, with a sheet size capacity to 30 in. wide, is described. Data regarding Virkotype compounds and inks are also available. Circle No. 324 on Reader Service Card.

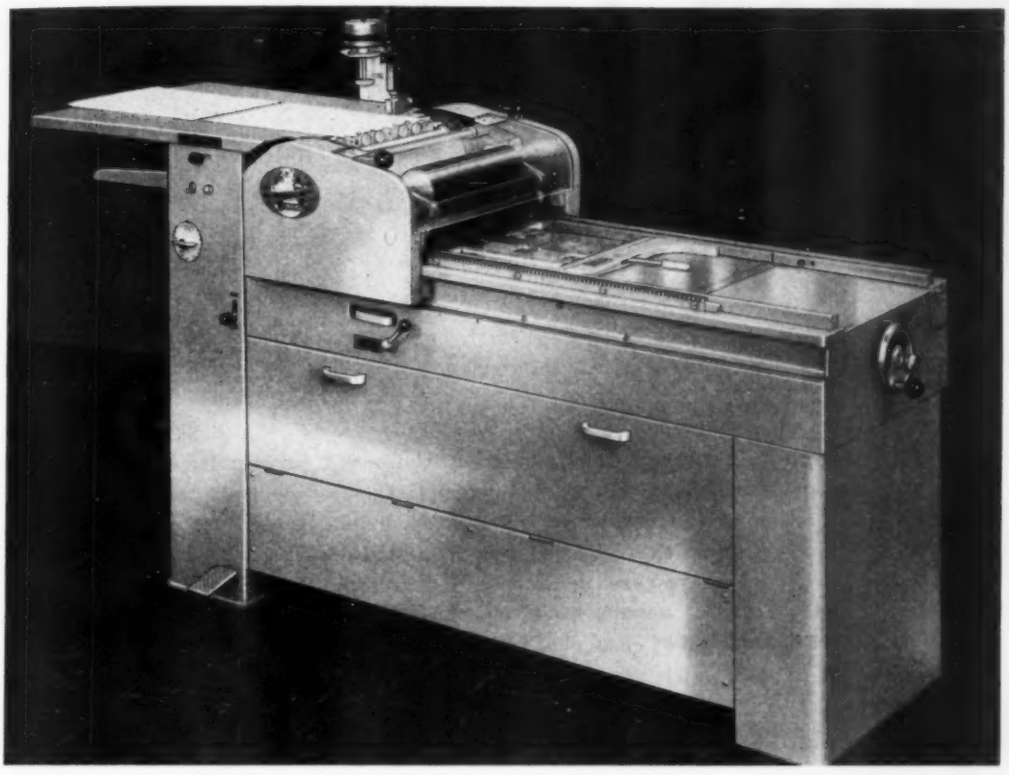
ATF CHIEF 20 PRESS

An eight page booklet descriptive of special features of the Chief 20 offset press is offered by American Type Founders Co. Press handles sheets ranging from 8 in. by 10 in. to 14 in. by 20 in., at speeds up to 5500 i.p.h. Circle No. 344 on Reader Service Card.

(*Continued on Page 80*)

Vandercook Universal I

Designed to have Universal Appeal to Printers, Typesetters and Plate Makers All Over the World! Mass Produced for Greatest Value!



Features...OF THE NEW VANDERCOOK UNIVERSAL I TEST PRESS...

- Maximum form or plate size 15″x22″
- Hand or power operated
- Plastic covered power inking system with 20-second form roller change and adjusting knobs for setting form roller height. No other adjustments required.
- Automatic washup
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For More Information Circle 182 on Reader Service Card

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For More Information Circle 114 on Reader Service Card

PRINTING
EQUIPMENT
Engineer
May 1958

Six Hundred Orders A Day

Handled without a production control board by St. Louis religious publishing house which produces publications in combination plant.

By **MILDRED WEILER,** *St. Louis Correspondent*

CHRISTIAN Board of Publication, St. Louis, Mo., is probably one of the few plants its size successfully processing 600 jobs a day without the use of a production control board.

Walter Taylor, director of manufacturing, and Ray Pence, assistant director, call it manufacturing control. The system, worked out three years ago, branches out from a master card file in the manufacturing control office and is maintained through a series of duplicate cards and forms.

Since it has been in effect, the system's proponents claim less waste, fewer errors, less alterations after copy is set, a smoother running operation, and maintaining of promised delivery dates.

In addition, since the system was developed within the organization by staff personnel, it is geared to meet the needs of the organization and everybody understands it.

Christian Board of Publication, a letterpress-offset plant, also has a composing room, a large modern bindery and mailing department. It operates two shifts a day to supply curriculum materials, books and supplies for the Disciples of Christ.

The plant produces four types of printing: (1) Books (issue 30 new titles a year). (2) Curriculum materials most of which are on 3 to 5 months schedules. (3) Weekly and monthly magazines. (4) Religious commercial printing.

This adds up to the whopping total of 600 jobs a day. Not all of them, however, move on each day. Somewhere, though, someone in the organization is daily working on the job that isn't in-process in some department, so each job is worked into the manufacturing control system.

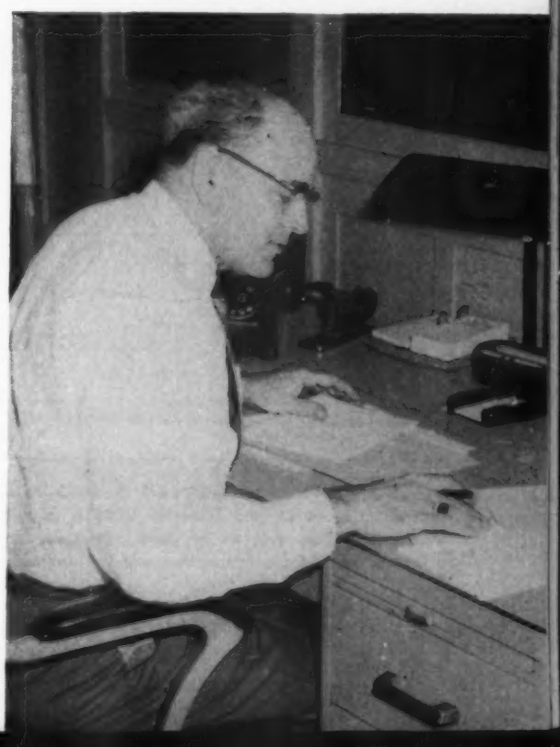
The System Works Backwards

The system found its start in the bindery three years ago and actually works backwards from there. At that time Ray Pence was bindery foreman and there was no definite production schedule. Work often rushed through the pressroom stood on skids in the bindery for days, waiting for some piece of bindery equipment available to handle the job.

Since practically every job, from book manufacturing to publications and advertising pieces, needed the bindery's services, Pence reasoned that some definite system of scheduling in the bindery was important.

He worked out what he calls the pink card and machine sheet system for the bindery. On a 5 in. by 8 in. pink card (Fig. 1), the bindery supervisor was provided with a record of each job, its requirements, date wanted and date of first and final delivery or mailings. At the same time, a 5 in. by 8 in. white sheet (Fig. 2), went with the job to the specific machine, with the job steps listed on the sheet. When the operator at that machine finished the job, the white sheet was returned to the supervisor's desk.

This gave the bindery supervisor, and the entire plant, a picture and record not only of the work going through the bindery, but also



Ray Pence, assistant director of manufacturing at Christian Board of Publication, St. Louis, checks finished jobs reported by bindery against jobs entered on Daily Bulletin.

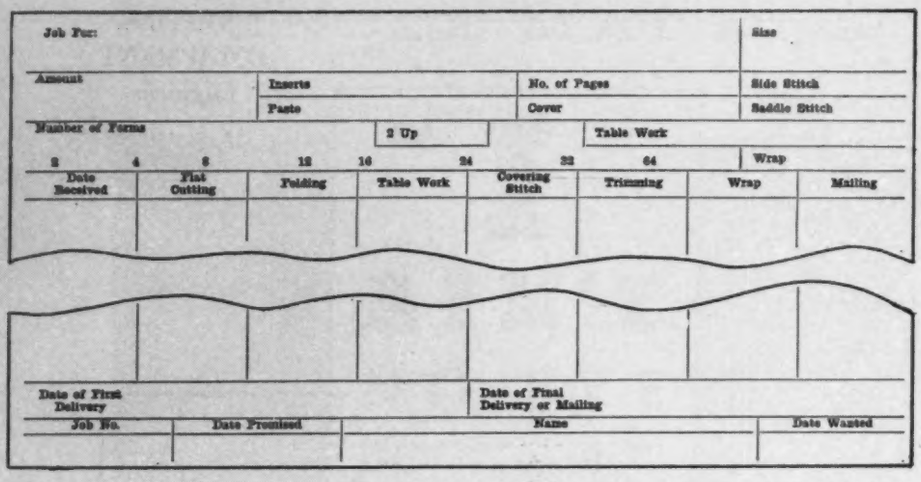


Fig. 1—The production control system at Christian Board of Publication, St. Louis, began with this form. It is used in the bindery to provide the superintendent with a record of each job. The form is printed on pink card, measures 5 in. by 8 in., and includes information on the job's requirements, date wanted and date of first and final delivery or mailings.

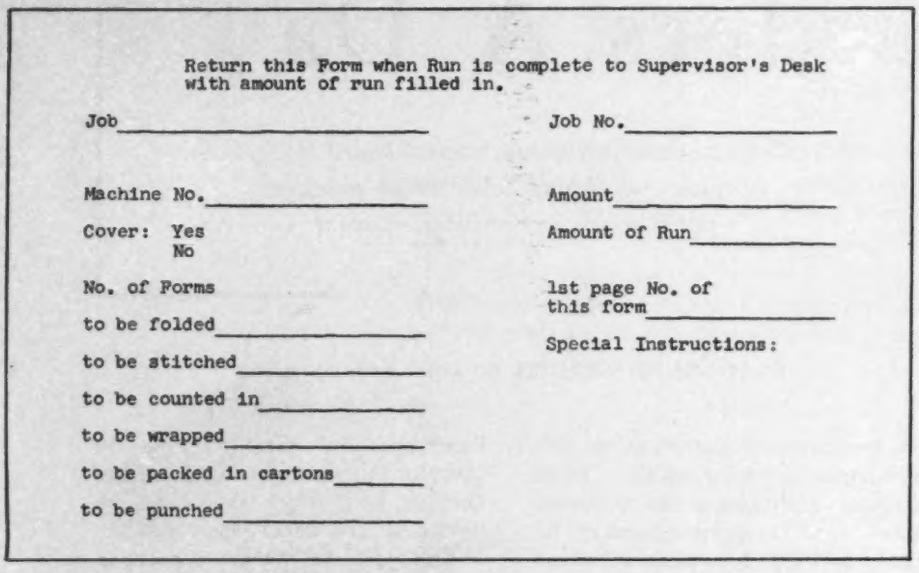


Fig. 2—The bindery also uses this duplicated form (5 in. by 8 in.) which accompanies the job to the specific machine. Job steps are listed as a guide to the worker. Form is returned to supervisor upon completion of job.

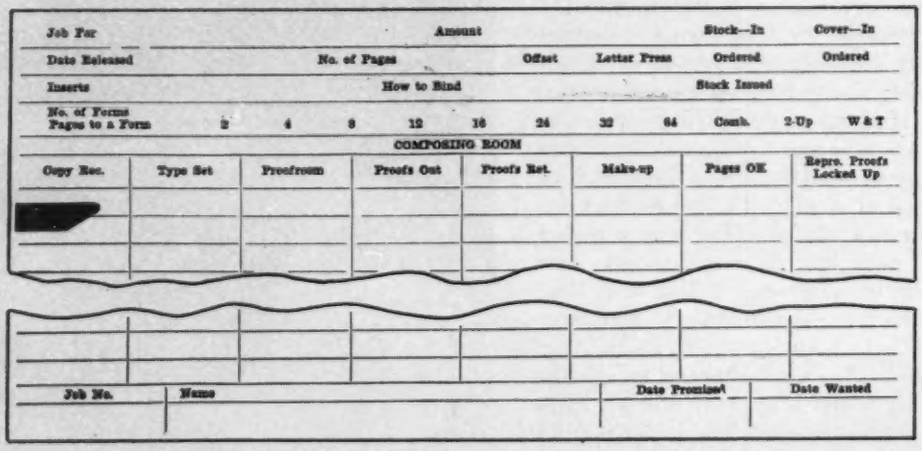


Fig. 3—This form, printed on 5 in. by 8 in. white card, is used in the control office's master card file. A colored indicator (left) is attached to card to indicate department location of the job. Back side of this form covers operations in the pressroom and bindery. As the job enters each department the color of indicator is changed.

showed when machines and men would be available to take on the next job.

Supervisors Do the Scheduling

Today, the entire system is geared to the bindery's ability to move the work through the department.

"The manufacturing control office doesn't try to schedule the work to the equipment," Pence explained. *"We give our supervisors the authority to schedule the work on a specific piece of equipment and have confidence in them to use the equipment available to the best advantage of the job. The supervisor knows what each piece of equipment can do."*

The over-all control system works like this: Each day every department supervisor receives a copy of the Daily Bulletin. The Daily Bulletin consists of several galleys listing all jobs by job number, name of customer and description or title of job. The jobs are grouped according to category such as Church School Department jobs, books, publications, and miscellaneous. Each supervisor displays the Daily Bulletin galleys in his department. Not every job listed on the Daily Bulletin will be in each department on that day, but by listing all the jobs everyone gets the complete over-all picture.

A job ticket (Fig. 4) is made up for each job in the manufacturing control office. At the same time a 5 in. by 8 in. card (Fig. 3) is made up for the control office's master card file. This card contains the same information as that contained on the job ticket. A carbon of the job ticket is also sent to the supervisor of each department.

Visual Card File

A clerk in the manufacturing control office files the master card in a visual card file and attaches a colored metal indicator to the card to indicate the department location of the job. As the job progresses, the clerk changes the color of the indicator on the card to show where the job is.

The card is filed according to category, whether it deals with books, curriculum literature, publications or other material. By pulling out any drawer in the master visual card file, the director of

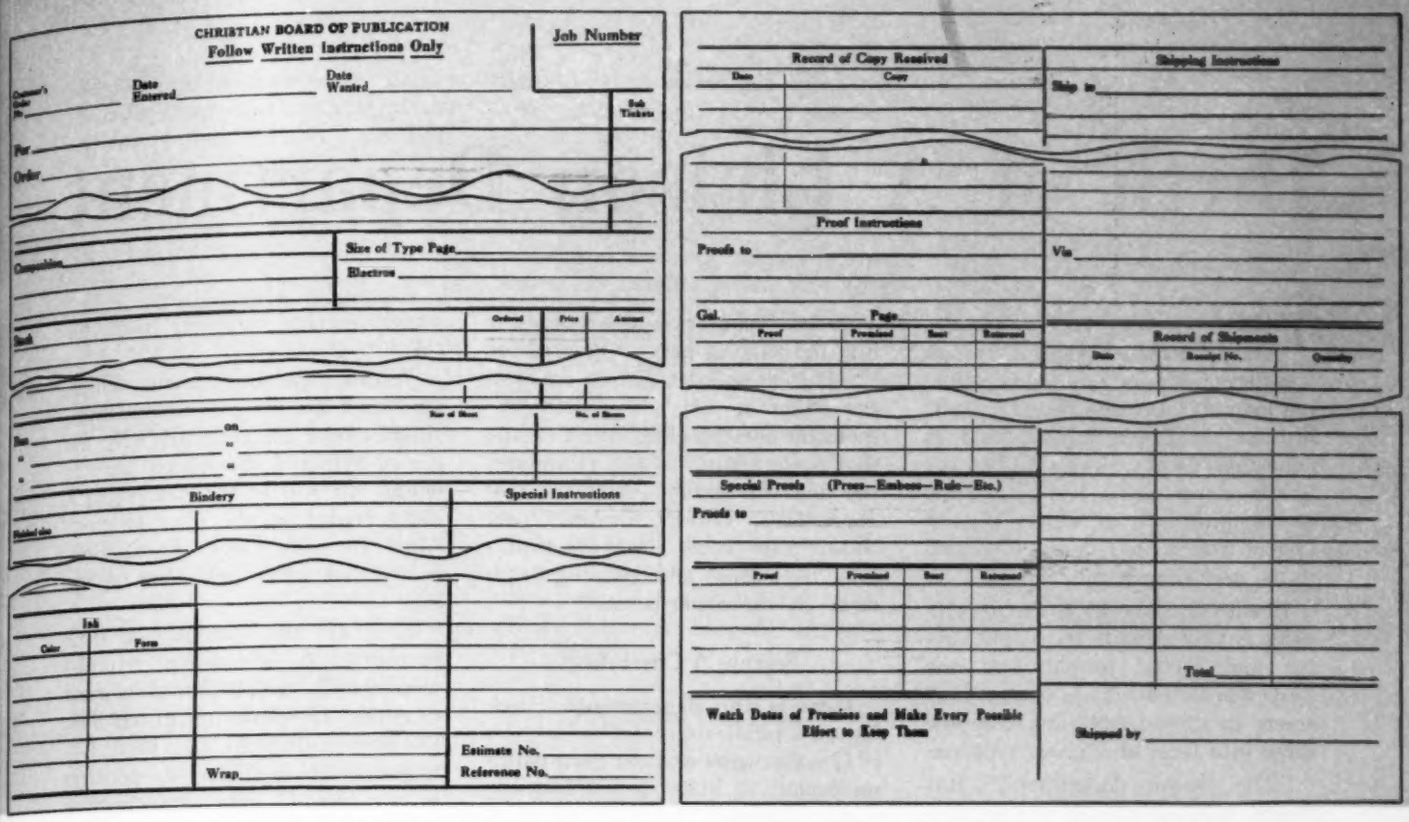


Fig. 4—The front (left) and back (right) of job ticket used in printing plant of Christian Board of Publication, St. Louis. The form is printed in red on an envelope measuring 8¼ in. by 11¼ in. All information pertinent to the production of the job can be seen by the worker without need for going into the envelope. The job ticket accompanies order as it moves through plant.

manufacturing can see at a glance the job number, title of job, promised delivery date, and location of job in the plant. The master card file also serves as a permanent record after the job is completed.

The bindery keeps its own pink 5 in. by 8 in. card record of the job. The bindery supervisor records his work on the job on the card. He also sends a duplicate of the card to Mr. Pence to show what the bindery has been doing on the job that day. The composing room superintendent uses the same card system as the bindery.

In the pressroom a three-part tag (Fig. 5) is used to record work on each job. When the job goes on the press the form tag is punched on a time clock. Bottom part is torn off and put in a box at the time clock. The office clerk in the pressroom picks it up and forwards it to Pence.

When the job is off the press, Pence then gets the second part. The third part of the tag goes back to the composing room when the form is off the press.

System Replaces Meetings

"*Some printing plant publishers,*" Pence explained, "*have meetings every day, but with the forms we use we don't need meetings. On anything marked rush, we contact the supervisor and alert him for it.*"

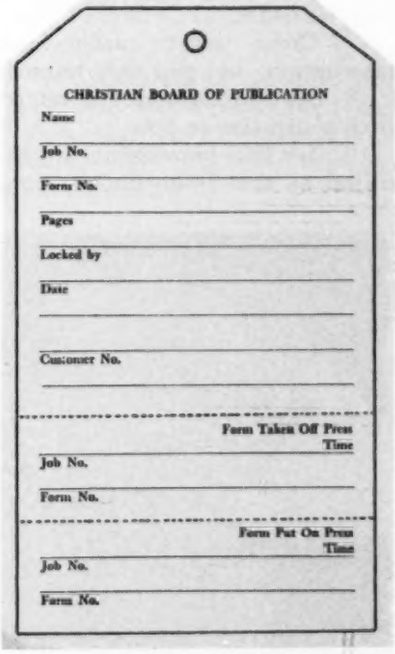


Fig. 5—Three-part tag (3¼ in. by 5¾ in.) used in CBP's pressroom to record work on each job. Bottom section is punched on time clock and torn off when job goes on press. Second part is time punched and torn off when job comes off press. Both parts are sent to control office soon after time is recorded. Balance of tag goes back to composing room with form.

A complete list of the status of every job in the plant is also given to Pence each morning.

On jobs that were not worked on, there will be no report, but the job is listed just the same. If that job should have moved and didn't the clerk will see it on the card file and call Pence's attention to this. He then begins his work as tracer or trouble shooter, which might be by telephone or by personally going to the department.

Thinks Card System Best

"*I have no rule of thumb on moving around the plant,*" Pence says. "*If a job is slowing down and is traced to a certain department, I will check in that particular department.*

"*We have tried to figure out what we could do with a control board,*" he added, "*but so far we've never been able to see how anything could be as efficient as our card system. It's a quick reference, and it also remains as a permanent record on all jobs.*"

An important link in the entire control system is the newly-created liaison department. Its operations are described in story on next page.

Birth of A Liaison Department

THREE years ago, when the manufacturing control system was placed in operation in the printing plant of Christian Board of Publication, St. Louis, a new kind of department was created. Called the liaison department, it has become an integral link in CBP's control system which has been described in the preceding story.

Headed by Jane Ellis, the department is staffed with 16 people, artists and layout people, and one clerk whose job it is to count characters in manuscripts and compute these into lines of a given typeface.

"*The liaison department,*" Ray Pence, assistant director of manufacturing, explains, "*gets the job before it goes into the plant. It is liaison's responsibility to meet all requirements for the job, such as copyfitting, getting proofs on time, etc. One of its most important functions is contact with editors and authors and because of this arangement editors never are allowed in the plant.*"

Taken by categories, let's begin with the five weeklies — four of which are printed offset, and the fifth letterpress. A schedule sheet is set up in the liaison department for each publication for the entire year. The schedule shows date of publication, date copy is due in liaison department, date copy goes to composing room, date repro proofs are due in liaison, paste-up date, date platemaker gets copy, date to pressroom, bindery and mailing room dates and mailing deadline.

One Job; One Clerk

Miss Ellis assigns one publication to one clerk in her department. If the editor doesn't submit copy on the scheduled date, the clerk assigned to that weekly reports to Miss Ellis, who then contacts the editor.

Each editor also supplies liaison with a rough layout indicating on which pages she or he wants the copy material to appear. One liaison clerk then proceds to count it, and the layout person arranges it into the page or pages requested for it. If it doesn't fit, liaison contacts the editor to cut it. This is responsible for the elimination of author's alterations. It also eliminates the need for galley proofs in CBP magazines. Editors, however, are shown page proofs. Artwork is also sent to liaison and paste-ups are made in the department.

Follows A Check List

Here is the department's check list on a publication:

(1) Get copy and art from editor on time.

(2) Complete layouts and issue printing instructions.

(3) See that proofs are received on time.

(4) See that proofs are returned from editor or customer on time.

(5) Paste-ups to platemaker on time.

(6) If publication is a letterpress job, order cuts.

(7) Order offset plates and brownprints, and give date wanted.

(8) See that brownprints return from platemaker on time.

(9) See that brownprints are returned on time from editor or customer marked properly with his OK.

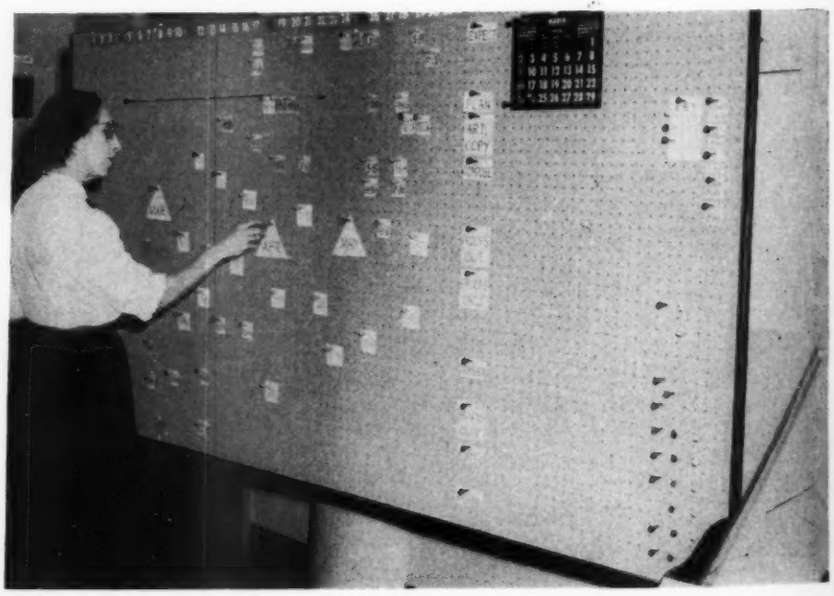
Within the department liaison personnel keep a Job Assets Disposition record on each job. By the use of symbols, the liaison clerk to whom the job is assigned, keeps a daily record of the job's progress. After the job's name, she indicates by symbol what was done on the job.

Here are the symbols and their meanings: A—manuscript returned to editor; B—art or photos returned to editor; C—paste-ups in our files; D—brownprints in our files; E—negatives in our files; F—positives in our files; G—plate specifications and press layout sheet in our files; H—progressives in our files; I—plate kill order, or hold order sent to Mr. X.

Ready for the Plant

When a job is ready to leave liaison for the printing plant, four copies of a form containing the same information as on the job ticket are made up. One copy goes to each departmental supervisor and the other is sent to the director of manufacturing control.

Another form showing specifica-



Liaison worker, Mrs. Frances Ryden, arranging marker on special peg board used in CBP's liaison department to keep track of jobs which need special attention.

tions of the job is used by liaison to order offset negatives and plates. At the end of the day Miss Ellis makes out a daily report from liaison to Mr. Pence. This shows the daily progress of each job in the liaison department.

Processing A Book

A category where much time and money is saved since liaison has been in existence, is the processing of the 30 new book titles published each year by CBP, plus other pamphlets and booklets.

"Before we had the liaison department," Miss Ellis explained, *"and a manuscript was estimated as a 160 page book, and turned out to be 190 pages, we cut it after the type was set. That proved to be wasteful and expensive. Now, nothing goes into the plant unless we are sure of the number of pages in the job. Very little cutting is done after the type is set."*

On books, the liaison department also sets up schedules for galley proofs for paging, etc., and the finish date. This request is then sent to Mr. Pence for his OK.

Here's the method: When a manuscript for a new book is ready, a Request for Measurement form is sent to liaison. The title of the book is given, the author, trim size, and body typeface is suggested.

The next step is to count the number of characters in the manuscript to determine how many printed pages of a given typeface it will make. If the counting clerk finds that the manuscript will make too many pages or an uneven number, the copy can be cut to fit before type is set, or the counter refigures it in another typeface. A decision is then reached on the typeface.

A production schedule follows and a job number given. The book jacket and cover may also be designed within the liaison department and time for this work is also scheduled.

When liaison completes its work as go-between for the author in getting style of the book ready, then a second production schedule is made up. All dates are included from time copy is due in the liaison department, to composing room, proofs, lock-up, bindery and delivery date.

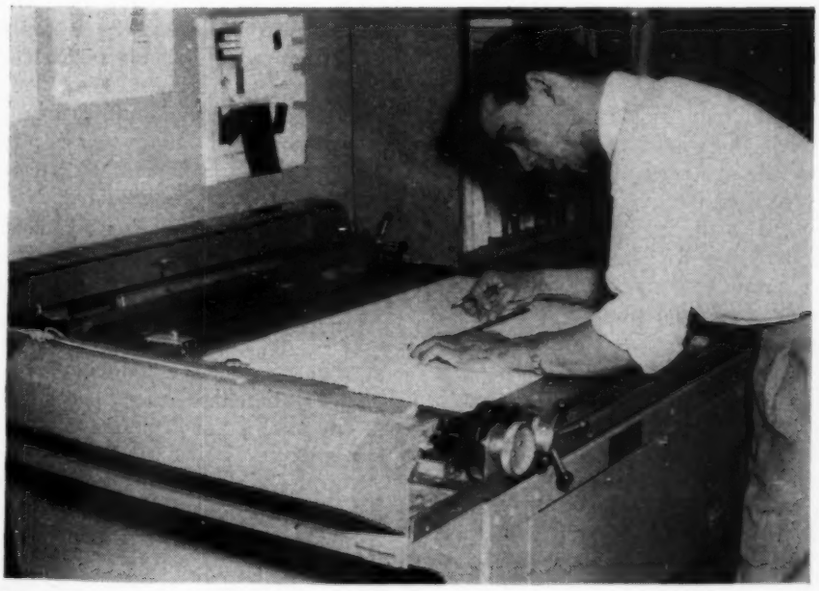
Peg Board is Helpful

Recently the liaison personnel developed a peg board to help them keep on top of jobs which need special attention. Three differently colored pegs are used to mark the jobs listed on the board as follows: Yellow—due this month; Blue—due next month; Red—job overdue.

The peg board serves as a special visual aid for the department in addition to the individual check each individual keeps on each job he handles.

"We make all our delivery dates fairly well," Pence pointed out, *"and liaison plays an important part in keeping the production system operating smoothly."*

Layout work on a weekly magazine produced at Christian Board of Publication is performed by Don Hargus, one of 16 employees of liaison department.



Anko Jansen, liaison department worker in plant of Christian Board of Publication, St. Louis, rules special offset paste-up form on line-up table.

Summer Courses at Carnegie

Summer school courses in printing and printing management will be offered by Carnegie Institute of Technology, Pittsburgh, in a six week session running from June 23 to Aug. 2. The program will include courses in typography, principles of production, layout and design, machine composition, presswork, photolithography and Graphic Arts processes. It will also include management courses covering estimating and cost analysis, accounting and statistical controls, sales organization, operation analysis, and a management seminar.

The courses are under the direction of Prof. Kenneth R. Burchard, assistant dean, School of Printing Management. Applications may be made to the director of the Summer Session.

Awarded Scholarship to RIT

The James L. Lee Foundation recently awarded a four year scholarship to Rochester Institute of Technology to James Brigham, a senior in the Grand Haven (Mich.) Senior High School. The scholarship will cover all tuition costs and contribute some towards other college expenses. It is the first of what may be a series of such scholarships.

Challenge Machinery Co. established the Foundation in 1953 in commemoration of James L. Lee, one of the founders of the firm.

Six new McCain inserter-stitcher-trimmer combinations standing by on Wednesday morning for the big job of binding over 1,300,000 magazine sections for the Sunday New York *Times*.

1¼ Million Newspaper Magazines Bound in 48 Operating Hours

SIX new McCain Inserter-Stitcher-Trimmer combinations — the first in the newspaper field—are reported to have enabled the New York *Times* to double the page capacity of its Sunday magazine section which circulates to more than 1¼ million readers.

The New York *Times Magazine* formerly was bound on the presses, capacity being limited to 80 pages. With the new binding equipment, magazines now are printed in signatures of 40-pages each, each magazine having up to four signatures, or 160 pages. Capacity can be further expanded by adding boxes to the inserters. The signatures are of the open-head type and completed magazines measure 10 9/16 in. by 13 in.

Printed by Gravure

The magazine is printed by the Hoboken, N. J. Alco-Gravure Div. of Publication Corporation, which operates 54 Goss Speedry rotogravure press units and 10 double news tabloid folders having 10 high speed stitchers. Signatures are shipped as they are printed and the first copies of the last signature begin to arrive at the F. M. Charlton Bindery in New York City on Wednesday mornings.

Within 48 operating-hours the entire job of binding magazines for over 1,300,000 papers has been completed and the last shipment delivered to the *Times* early Saturday morning. The bindery operates two shifts and completes the job by the close of the second Friday shift.

The six McCain combinations are installed on the third floor of a New York commercial building, the bindery's other operations being performed on the floor below.

Each machine forms a right angle, the inserter and stitcher forming one long leg and the trimmer and delivery table forming a shorter leg. The machines are nested, one angle within another, in two groups of three. This arrangement permits conveyors to be extended from the trimmers of each group to a common group delivery table, thus centralizing delivery in two areas and simplifying handling and material flow.

Six Pocket Capacity

The inserting section of each automatic machine has six pockets and when supplements contain two or three signatures, four or six pockets are used, the machine inserting two magazines per cycle. When there are four signatures, four pockets are used and one magazine is inserted per cycle. Signatures are placed in the pockets on edge, backbone down, for lap-type feeding onto a saddle conveyor.

As assembled signatures leave the inserter, they pass through a caliper which checks them for possible misses or doubles. Imperfect magazines are not stitched and are deflected to an alternate delivery table for reclaiming. Perfect magazines are registered, stitched and proceed to the infeed chain of the trimmer.

At the trimmer, stitched magazines are lifted from the saddle on a blade and advanced upward into the bite of forwarding wheels which drive them against a guide that directs them horizontally onto the trimmer feeder conveyor.

Speed of the Machines

The trimmer, as does the stitcher, operates twice as fast as the inserter when inserting two or three-signature magazines, since the inserter services two magazines per cycle while the other machines handle but one. Thus, if the trimmer is trimming 6500 magazines an hour, it completes 6500 operating cycles whereas the inserter completes 3250.

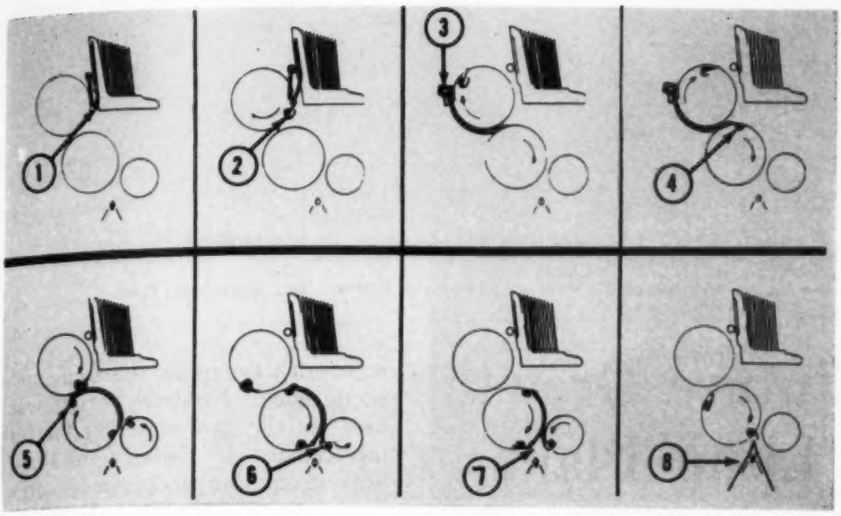
A kicker device at the trimmer exit cocks individual magazines at pre-determined intervals to simplify stacking them in pre-counted lots. This kicker is operated by a feeler which is contacted by each magazine as it leaves the trimmer. Upon being contacted a preset number of times, the feeler actuates an arm which knocks the coming magazine askew.

Special Devices Installed

In installing these machines, every effort was made to reduce downtime, eliminate possible damage to machine elements, and keep product-spoilage to a minimum. Therefore, a number of special devices have been provided. One of these is at the inserter pockets. To insure placement of the proper signatures in the inserter pockets, mounting boards have been installed above each pocket and when running a given job, specimen signatures are clipped to these boards indicating which signatures should go into which pockets. Also, limit switches have been provided at each pocket to stop the machine and prevent choke ups when signatures without laps are encountered.

The saddle conveyor has two limit switches for stopping the machine should a signature be dropped on a pusher lug instead of between lugs. The extra switch is located at the inserter exit to insure stopping the machine before paper gets to the stitcher or trimmer forwarding rolls.

Another place where modifications have been made is at the stitcher-trimmer transfer area. The objective here is to prevent jam-ups at forwarding rolls and guides. Should signatures not be properly butted



How the McCain inserter, such as used for handling New York *Times Magazine* section, operates is shown in this diagram. (1) Suckers pull out signature backbone; (2) Signature is grasped by upper cylinder grippers; (3) Upper cylinder carries signature to adjustable stop; (4) Lap grippers of lower cylinder close on long fold; (5) Backbone grippers hold signatures secure; (6) Opening grippers on small cylinder take short fold; (7) Counter rotation of two cylinders open cylinder; (8) Signature deposits onto saddle.

against a conveyor lug, and one overlap the other, the extra length of the overlapped signatures prevents them from being lifted into the forwarding rolls and they remain on the saddle and operate a disconnect switch which stops the machine for removal of the magazine.

Also, the machine stops automatically if forwarding rolls are spread apart by accumulating paper. In addition, the guide-support shaft located above the forwarding rolls is constructed in two sections so that it can be quickly disassembled should magazines get caught between the rolls and the guides.

Can Handle Other Work

When the machines are not in use on the *Times'* magazine, the bindery uses them on other work, and there are several innovations which adapt the equipment for its dual function. For one thing, the inserter is equipped with dual mechanisms so that it can handle closed-head signatures as well as lapped. Also, the saddle conveyors extend beyond the inserter to permit hand feeding in cases where signatures are too long (over 18 in.) for the trimmer. In these instances delivery is to the alternate delivery stacker.

Another innovation involves three separate exhaust ducts, each of which can be connected to any of the six trimmers by means of flexible couplings at the machines. This enables separation of different types of trim which might be in production on different McCain Combinations. For example, one machine may be trimming a coated stock and another a newsprint stock, the trim of one being of considerably more value than the other. The three-duct system separates the two.

Production schedules are arranged so that when employees are not required on the *Times* job or on on other combination inserting-stitching-trimming jobs, they are assigned to second floor operations where other small and large commercial and publication binding jobs are handled.

Correction on Supply Source

The incorrect supply source of a pig metal truck was given in the March 1958 issue of *Printing Equipment Engineer*, page 20. The truck, which can be used for transporting 16 Margach-type pigs from storage to linecasting machines, is patented by George Lautzenheiser, jr. Please circle No. 281 on Reader Service Card for more information and your inquiry will be forwarded to the correct source.

R&EC Conference Program Announced

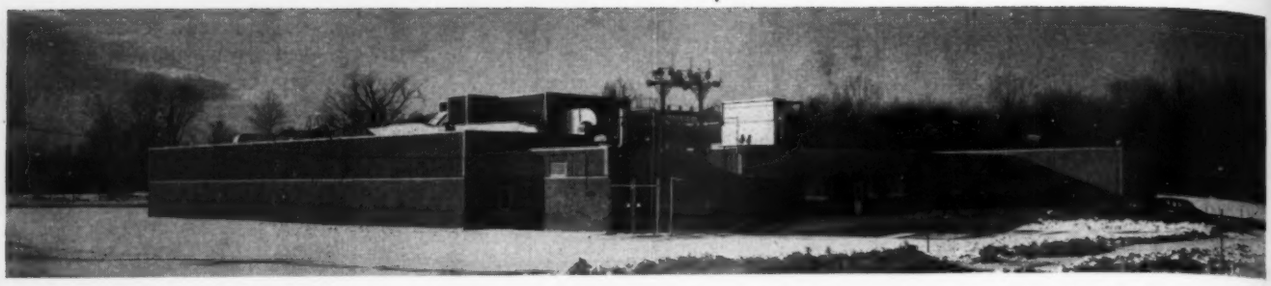
The Eighth Annual Conference of the Research and Engineering Council of the Graphic Arts Industry will be held at Hotel Edgewater Beach, Chicago, May 21-23. According to Alan S. Holliday, conference chairman, discussions on powderless etching and web printing will be features of the program.

Speakers include Samuel Caldwell, Massachusetts Institute of Technology, who will discuss new developments in the industry, particularly in the field of electronics. T. Blair Hawkes, T. W. & C. B. Sheridan Co.; Howard Seel, Harris-Seybold Co., and Judson Hyatt, Fairchild Graphic Equipment, Inc., will relate what they saw a few days earlier at the DRUPA International Printing Exhibition held in Dusseldorf, Germany. The May 22 luncheon speaker will be William Gove, EMC Recordings Corp., who will present what is reported to be an interesting talk on salesmanship.

A group of printers and platemakers, moderated by Ed Shipley, Kingsport Press, will talk on powderless etching processes. The tentative panel consists of: Robert H. Downie, Marathon Div., American Can Co.; William Bradley, Litho Color Corp.; W. J. Frisch, Wright Company; Otis Simpson, Royal MacBee Co.; Jack Lear, Industrial Engraving Co., and Ed Thomas, Speaker-Hines & Thomas Co. Also planned is a panel discussion on web printing by letterpress, offset, gravure, and flexography, with emphasis on its use by small and medium-size plants. The discussion will be led by George Harper, Maclean-Hunter Publishing Co., Ltd.

Chairmen of the Council's five standing committees will lead a problem solving session concerned with particular problems brought out in a recent R&EC survey. Panelists will include: Alan S. Holliday, composition; Edward J. Triebe, binding and finishing; C. M. Flint, engineering and materials handling; Marvin C. Rogers, photomechanics and platemaking, and William C. Walker, printing.

Further information may be obtained from Research and Engineering Council of the Graphic Arts Industry, 5728 Connecticut Ave., N. W., Washington 15, D. C.



This New England wintry scene shows the new lithographic plant of Connecticut Printers, Inc., Bloomfield, Conn.

Provisions for Future Growth Made in Conn. Litho Plant

NO LONGER must we reject new product opportunities because our manufacturing facilities did not lend themselves to various requirements, declared the management of Connecticut Printers Inc., Hartford, Conn., in its 1957 report to stockholders. This progressive view is reflected in the opening by the company of a new lithographic printing plant which incorporates unique features for anticipated growth.

The modern one-story building is operated as the Kellogg & Bulkeley Lithographic Div. of Connecticut Printers. It is situated in Bloomfield, Conn., on 13 A. plot of land near the city line of Hartford. The new plant includes more than 31,000 sq. ft. of floor space and features two temporary walls which will allow future expansion in two directions. The above view of the new facilities shows ample area available for any additional construction. The new plant was engineered by the firm of Buck & Buck, Hartford, Conn.

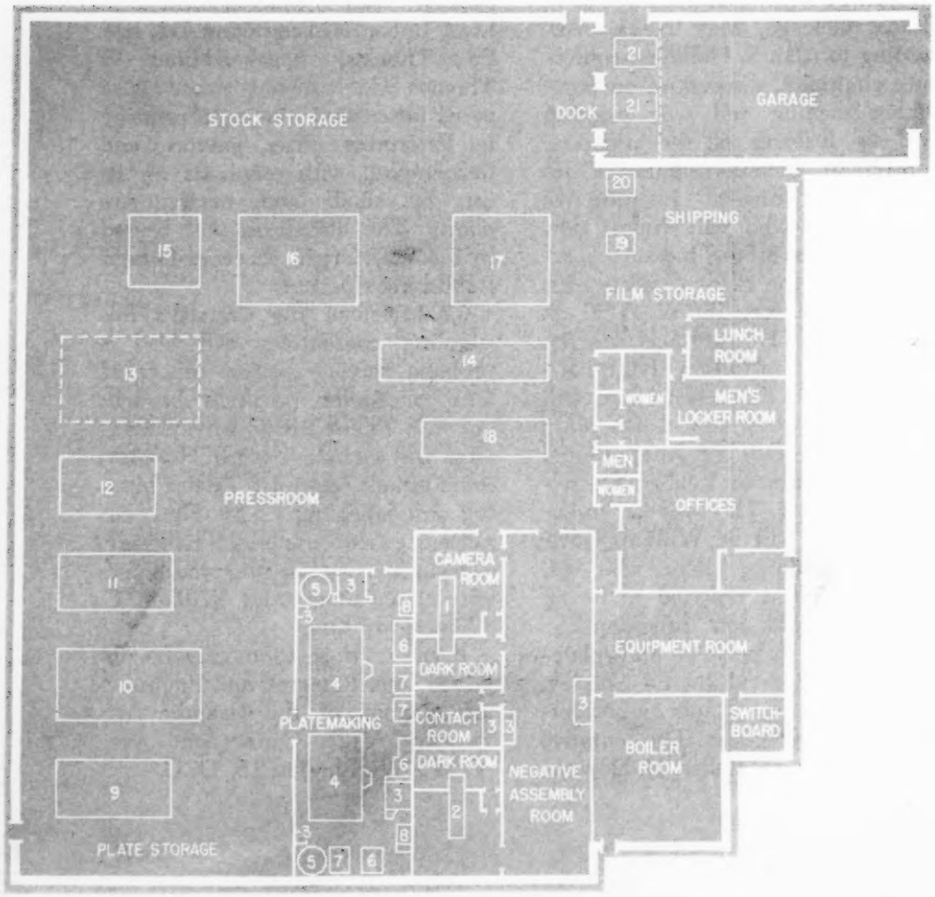
It is planned to develop the Bloomfield plant into one that will house the company's manufacturing and converting operations of the future rather than commercial jobbing business, which is housed at another location.

The completely air conditioned plant is constructed of cinder block with brick facing on the front and north sides. No brick facing was used for the two walls left for future expansion. Ceilings are 15 ft. high except for stock storage area where 19 ft. high ceiling allows the stacking of skids and rolls of paper three to four high. A new gas-driven fork-lift truck accomplishes the task of stacking materials to a height of about 17 ft.

A special hardener and sealer were added to the concrete floors to prevent dusting. Where wet and slippery areas are likely to occur an abrasive was trowelled in. The loading area includes platforms that can be raised or lowered automatically to the floor level of the truck. The dock can accommodate two large trailer trucks to load or unload simultaneously.

Air conditioning "for process control rather than worker comfort" is maintained at 72° F. and 47% relative humidity with minor variations of one or two degrees. The setting, however, can be changed if necessary. Special equipment keeps the water delivered to darkrooms at 68° F. To heat the building, natural gas is used at present. However, the boiler can be heated with either gas or oil, the change-over taking about five minutes.

Fluorescent lighting is used throughout most of the plant except at the press sheet inspection



Floor Plan Layout of A Lithographic Division

1—36 in. Camera
2—24 in. Camera
3—Developing sinks
4—Rutherford photocomposing machines
5—Plate coaters
6—Printing frame
7—Work tables
8—Light boxes
9—Harris single-color press
10—Harris two-color press
11—Harris two-color press
12—Harris single-color press
13—Proposed press
14—Hamilton press
15—Paper cutter
16—Paper conditioner
17—Carroll IBM press-slitter-sorter
18—Eight-station collator
19—Skid lift
20—Scales
21—Leveling docks

table and workmen's benches where special lights simulate daylight as nearly as possible. Examolite fixtures, approved by Research and Engineering Council of the Graphic Arts (see *Printing Equipment Engineer*, March 1958, page 74), are used whenever press sheets are being checked for color match or strength. Even the parking lot is covered by floodlight which can be set to shut off 3 to 15 minutes after the last man on the night shift leaves.

Diversity of Products

The parent corporation's, Connecticut Printers, Inc., diversity of products includes cards for use on IBM electric accounting machines; books printed by offset and letterpress in one to four colors; sales promotion and advertising pieces; business forms ranging from single page to multiple part snapout forms; magazines and bulletins.

This year the company entered the field of tabulating card printing. The first Carroll IBM card printing press was delivered last year with two more placed on order. A roll slitter to service the three card presses was also purchased. Another new press, as indicated in the floor plan, is planned.

Connecticut Printers, whose employees number about 300, owns another five-story plant, the Case, Lockwood & Brainard, Letterpress Division, in Hartford, where the commercial jobbing business and all finishing work is done.

Production Scenes in New Litho Division Plant

1—The negative assembly room is manned by highly skilled craftsmen and equipped with modern production tools. This department, like all others in the plant, is completely air conditioned.

2—One of K&B's two Rutherford photocomposing machines is shown at right in the platemaking department. In center background is one of the department's two plate coating machines. Concrete floors containing a special sealer to prevent dusting have been installed throughout plant.

3—A view of the pressroom showing some of the division's single and two-color Harris offset presses. Fluorescent lighting is used throughout most of plant. Ample area for paper skid storage has been made available near the presses.

4—In center background is a Carroll IBM card printing press which was installed when the company entered the field of tabulating card printing. At left is an IBM card sorter for sorting the cards into the desired classifications before shipment.

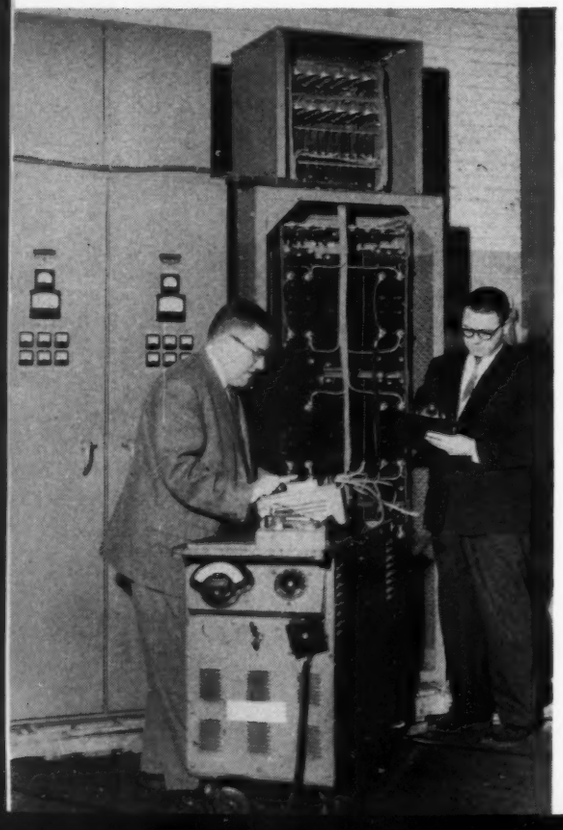
C-H Engineers Perfect New d.c. Press Drive System

By T. M. BIRCH, *Systems Control Sales Div., Cutler-Hammer, Inc.*

IN THE last 25 years there has been much discussion of the comparative merits of alternating current and direct current newspaper press drive and control systems. During this time, the industry has seen constant potential d.c. drives, a.c. wound rotor drives, and d.c. adjustable voltage drives used with considerable success. However, because of the ever decreasing availability of constant potential d.c. in modern printing plants, the latter two drive systems have been most popular in recent years.

Described here is a new form of d.c. drive manufactured by Cutler-Hammer, Inc., as a companion system to its present a.c. wound rotor drives. The new drive is available in either of two forms: The unit-type drive for high-speed metropolitan newspaper presses; and the single motor drive for single width presses, rotogravure, magazine and specialty presses.

Both the unit and single motor versions are represented by a simplified diagram as shown in Fig. 1. Power is obtained from a standard voltage, 3 phase, a.c. power source and is converted to adjustable voltage d.c. by means of saturable reactors and silicon rectifiers. This voltage is then applied directly to the armature of a d.c. shunt motor. Motor field excitation is also obtained from the a.c. supply source which is rectified and controlled by saturable reactors.



Prototype unit controller of the new Cutler-Hammer press drive system. Two 50 h.p., d.c. motors are shown undergoing final testing prior to installation on a high speed newspaper press. Two sets of power reactors and rectifiers are visible at right.

Basic Component of System

The combination of rectifiers and saturable reactors is called a magnetic amplifier. The use of magnetic amplifiers is not a new innovation in the electrical industry. They have been used with outstanding success in the steel and machine tool industries, the military, etc. However, until several years ago, the use of magnetic amplifiers was restricted to comparatively low power applications such as the regulation of d.c. motor and generator fields in adjustable voltage systems.

Until the development of silicon rectifiers, the conversion of alternating current to direct current by "dry" type rectifiers involved devices which were too prohibitive in size and cost to be used to supply motor armature circuits directly. The perfection of silicon rectifiers, therefore, has provided the answer to efficient power conversion and is a basic component of the Cutler-Hammer system. Efficiencies of more than 99.5% are claimed to be obtainable from these rectifiers. Therefore, it is not necessary to use forced air or water for cooling the rectifiers to prevent overheating.

Cutler-Hammer has built, installed and operated both the magnetic amplifier d.c. unit and d.c. single motor group drive systems on newspaper presses. A unit type system was tested on a high speed metropolitan press in a leading press manufacturer's plant. This test used 50 h.p. unitized d.c. motors and demonstrated an over-all speed range of 5 c.r.p.m. to 590 c.r.p.m. (67,000 i.p.h.) without auxiliary threading speed equipment.

A group drive system is now installed on a single width, six unit, one folder press at the Beloit (Wis.) *Daily News*. This drive uses two 75 h.p. motors which can be operated alone or in tandem. It is believed that the Beloit installation is the first power magnetic amplifier d.c. system ever applied to a newspaper press. In addition, a 100 h.p. single motor drive is being built for a seven unit, one folder rotogravure press and a 15 h.p. and a 30 h.p. drive and control have been built for sheet-fed presses.

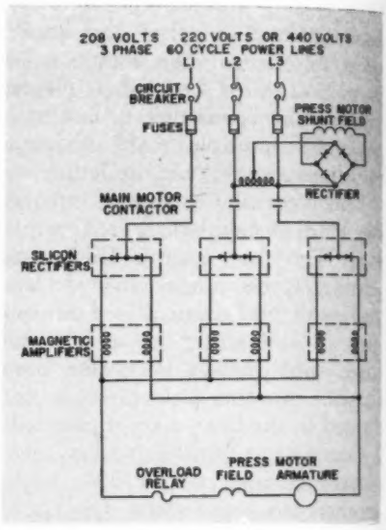


Fig. 1 — Cutler-Hammer's new press drive system is available in both unit-type and single motor versions which are represented in this simplified circuitry diagram. Power conversion and application is shown.

Data obtained from the newspaper press installations is illustrated in Figs. 2 and 3 and reveals a number of the more important attributes of the magnetic power amplifier drive and control system.

Fig. 2 shows controller efficiency, power factor and system power input as related to press speed. These curves apply to a press which is geared so that the press runs at 40,000 i.p.h. when full voltage is applied to the motor armatures at full field strength. Speeds below 40,000 i.p.h. are therefore obtained by decreasing motor armature voltage and speeds above this figure are obtained by weakening the motor fields.

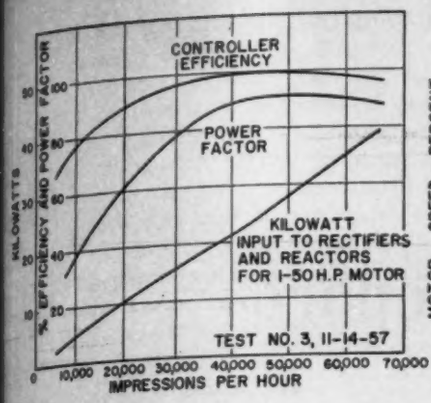


Fig. 2—Performance characteristics of the new C-H press drive. Controller efficiency, power factor and system power input as related to press speed are shown.

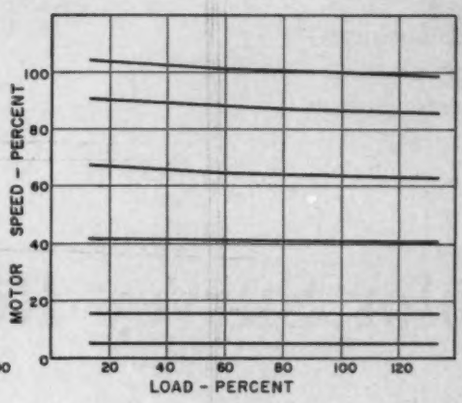


Fig. 3—This graph is intended to show that press speed is virtually independent of press load over a comparatively wide range on the new C-H press drive.

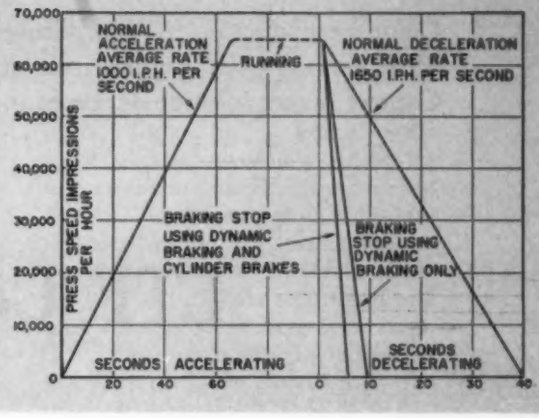

NORMAL ACCELERATION AVERAGE RATE 1000 I.P.H. PER SECOND
RUNNING
NORMAL DECELERATION AVERAGE RATE 1650 I.P.H. PER SECOND
PRESS SPEED IMPRESSIONS PER HOUR
BRAKING STOP USING DYNAMIC BRAKING AND CYLINDER BRAKES
BRAKING STOP USING DYNAMIC BRAKING ONLY
SECONDS ACCELERATING
SECONDS DECELERATING

Fig. 4—Acceleration, deceleration and braking performance characteristics of both the unit-type and single motor group drives of the new Cutler-Hammer system.

Note that the a.c. input power required is approximately proportional to press speed. Also, the power required to drive the press is similarly related to press speed.

Tests show that controller efficiency and power factor decrease considerably as the press is operated below the motor base speed. However, these reductions are on a percentage basis of full load power. The actual wattage loss and reactive volt-amperes are low at reduced press speeds because the total volt-ampere input to the system is low at these speeds.

Low Speed Presses

Presses which are designed for top speeds lower than the 67,000 i.p.h. mentioned previously can take advantage of a correspondingly lower geared-in base speed. For example, the installation at the Beloit *Daily News* has a maximum rated speed of 40,000 i.p.h. Therefore, the drive motors are coupled to the press so that base motor speed corresponds to 26,000 i.p.h. Hence, press speeds between 26,000 and 40,000 i.p.h. are obtained at maximum power factor.

Fig. 3 shows that press speed is virtually independent of press load over a comparatively wide range. This attribute is particularly advantageous on single motor group press drives where a single motor may be called upon to handle a range of press loading on successive days. No readjustment of threading speed is required within the load range.

Fig. 4 depicts typical acceleration and deceleration characteristics of both the unit and single motor group drives. Acceleration is controlled on a time limit basis which is readily adjustable to meet the demands of the web tension regulating system. Deceleration on a red button stop or because of a web break is achieved by conventional dynamic braking and is, therefore, fast and smooth.

Called the A-C Webmaster

The unit drive version of the new Cutler-Hammer system is called the D-C Webmaster. Like its companion, the A-C Webmaster system, the control as well as the motors are completely unitized.

Each motor has its own armature power magnetic amplifier, its own field magnetic amplifier, line contactor and protective components, dynamic braking system, etc. All control components are accessible through full-length doors. The failure of any one motor or its associated control will not immobilize press since the remaining unit motors can develop sufficient horsepower to operate the press at only slightly reduced top speed.

Cutler-Hammer believes that the choice between a.c. and d.c. press drive systems can never be overwhelmingly decided in favor of one over the other for all applications. Each system has its advantages.

The final selection of a system should be determined by a study of such factors as: (1) Maximum geared press speed, and expected future operating speeds; (2) Maximum present day running speed; (3) Normal present day running speed; (4) An analysis of local power company policies, and (5) Individual user preferences.

Maine Plant Devises Self-Mailing Suggestions

The Daily Kennebec Journal, Augusta, Me., printers and publishers, has devised a self mailing suggestion form which eliminates use of the standard wall type suggestion box.

Form consists of a 7 in. by 11¼ in. sheet with instructions for folding and mailing, reports John H. Gannet, manager. Provision is made for recording the suggestions by a pre-printed number appearing in three places on the form.

The self mailer enables an employee to make his suggestion on the sheet, sign his name on a numbered stub, tear off a numbered receipt stub, and mail the form.

Before suggestions are judged, stubs bearing employees signatures are removed. Ideas are then identified to the judging committee by number only.

Pictured is a novel self-mailing suggestion form appearing on a bulletin board of the Kennebec Journal plant, Augusta, Me.

Color reproduction is complicated business—
Most serious photographic masking obstacle—
Control of wet ink transfer on four-color presses.

LTF Color Survey Report

By FRANK M. PREUCIL*

**Supervisor, Photographic Div., Lithographic Technical Foundation*

COLOR reproduction, correction, masking, and the evaluation of inks, papers, and methods used in process color work make up a complicated business in the Graphic Arts. Confusion and inconsistent results have almost come to be accepted as normal. This is because color reproduction is still an imperfect system. Also, information about it is often sketchy or incorrect.

Actually, there are only a few basic requirements for ideal color reproduction. These are logical and simple but they cannot all be achieved at the present time. In spite of this, reasonably accurate reproduction is possible with present conditions and the materials that are available if some care and intelligence are used. Complications (which cause trouble and require added correction steps) get into the picture when (1) We choose to ignore or compromise with the fundamental requirements or (2) We don't fully understand them and use inks, papers, and methods that are not able to satisfy them.

Modern Color Theory

Modern color reproduction is based on the theory that white light is a combination of only three primary colors—blue, green, and red. Each of these colors, which are called the additive primaries, represents about one-third of the spectrum.

In reproducing a color original, three photographic color separation negatives are made. Each is photographed through a filter having a color transmission that corresponds closely to the color of an additive primary (blue, green, and red). These color separation negatives are then used to make positive printers. They print inks whose colors correspond closely to the complementary colors of blue, green, and red, namely, yellow, magenta, and cyan. These complementary colors are combinations of pairs of the additive primaries and are called subtractive primaries. Ideally, a printing of the subtractive primary inks by the positive printers should produce a reproduction that looks like the original. Usually a fourth printer (black) is used but this would not be necessary if all the conditions of the theory of three color reproduction could be met.

The following conditions or requirements must be satisfied for a subtractive process color reproduction printed with inks to look exactly like the original:

1. The paper or surface we print on must fully reflect the complete spectrum of visible light.

2. The color separation negatives must be accurate tonal records of where the red, green, and blue thirds of the spectrum reflected from the original.

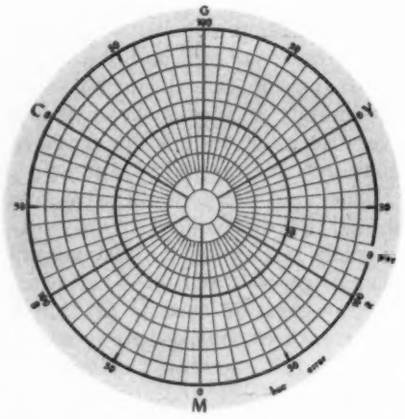


Fig. 1.—The LTF ink hue and purity chart.

3. The three subtractive primary process inks should each absorb light in only one-third of the spectrum and completely reflect the other two-thirds.

4. Inks must be transparent.

5. Inks must transfer onto the other layers of ink as well as they do onto the paper or other printing surface.

6. The strength of the three process inks must be related so that colored areas in the original that recorded alike in two separation negatives will accurately reproduce the secondary colors red, green, and blue.

7. The strength of the three process inks must be related so that areas in the original that recorded alike in all three separations will reproduce as neutral gray.

These are simple conditions but they cannot all be met with the materials that are available today. We have no papers that completely reflect the spectrum. All are tinted to some extent. On the other hand, color filters, especially the broad band set (25, 47, 58) are reasonably close to the requirements for color separation.

By far, the biggest problem in color reproduction is the inability of printing inks to satisfy the requirements of color absorption and reflection. Most yellows are good. Magentas and cyans have been notably poor. Just how poor they were and how they behaved on transfer and overprinting were things we did not know. So, to find out, we planned an extensive survey of the color reproduction being done by the industry.

Collecting Samples

The first thing we did was to design a four color test strip. It was ⅜ in. wide by 10½ in. long and had 21 different areas. It included solids of the four inks; two, three, and four color solid overprints; three-quarter, one-half, and one-quarter tints of each color, and a series of three color mixtures of equal dot sizes. (A color printing

of this test strip was published in *Research Progress* No. 38.)

We sent out more than 100 sets of positives and negatives of this strip to different plants in all parts of the country. They included it on their regular process color production runs and sent us samples. We received over 250 prints of this strip printed on one, two, and four color presses, using a wide range of process inks and papers.

Assembling

The first part of the study was to collect data from the strips. This was done by making some 12,000 color readings on the different strips with a densitometer. The readings were made through the Wratten No. 25, 58, and 47 filters.

From these readings we then calculated the hue error and grayness of the inks. This was done using the formulas given in *Research Progress* No. 38 and also in LTF's Publication No. 320, *The LTF Color Chart.* These calculations were easy to make but took a lot of time because of their number.

We then devised a circular chart to record the data. The chart was designed to help visualize the differences in the hue and purity of the inks that had been used. This chart, shown in Fig. 1 was also printed in color in *Research Progress* No. 38 along with full details for its use.

Briefly, an "ideal" yellow would fall on the outer ring at 2 o'clock, an "ideal" magenta on the outer ring at 6 o'clock, and an "ideal" cyan on the outer ring at 10 o'clock. "Ideal" secondary colors also would all fall on the outer ring with green at 12 o'clock, red at 4 o'clock, and blue at 8 o'clock.

The inside rings represent 10% increases in the grayness or lack of purity of the color. The grayer the color, the closer it will be to the center. The hue error of a color is thus shown by how far it is away from "ideal" (around the circle) and its grayness or lack of purity by how close it is to the center of the circle.

In Fig. 2 is shown the hue and grayness of the process inks used on 170 different press runs. The yellows were all toward orange but the majority had less than 10% hue error and were less than 5% gray. A few with up to 20% error were used as label colors.

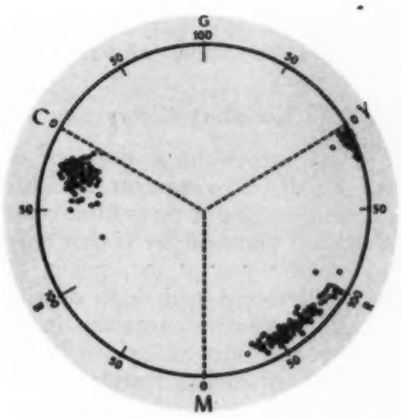


Fig. 2.—Range of process ink colors being used in the industry.

The hue error of the magentas ranged from 25 to 100%. A few really red inks were also used on labels. However, three-fourths of the surveyed "magentas" had hue errors of more than 50% and were closer to red than magenta. Such "process reds" upset blues, purples, and gray balances as much as if you tried to use a shade of green instead of yellow to reproduce reds, oranges, and flesh tones.

Most of the magentas were less than 15% grayed. This is important if we want to make the brightest red or orange. A 5% difference in the purity of a magenta can have more effect than a 50% hue error.

As a group, the cyan inks were much closer to ideal hue than the magentas. Practically all had a hue error of less than 50%. However, they had a much wider range of grayness which darkens blues and purples.

Efficiency of Process Inks

Hue and grayness are equally important factors in process color printing and color separation work. We, therefore, found it convenient to combine these two factors into a single factor that we called "efficiency." In using this word, we mean only a process color's efficiency in producing other colors. Efficiency was calculated from the equation given in *Research Progress* No. 38 and in LTF Bulletin No. 320.

We found that typical yellows in the survey had 95% efficiency. The efficiency of the very best magentas and cyans was about 80%. The average efficiency of magentas and cyans used by the industry was close to 60% with a few going below 50%.

Fig. 3 is the same as Fig. 2 except that lines have been added to show which cyans and magentas could be corrected with a single mask. Lines for a typical 40% mask such as is usually called for in conventional masking systems are shown. The mask would be designed to correct for inadequate reflection of blue. It would be made from the green filter separation and used on the blue filter separation. Only those pairs of inks falling on the lines could be corrected by the single 40% mask.

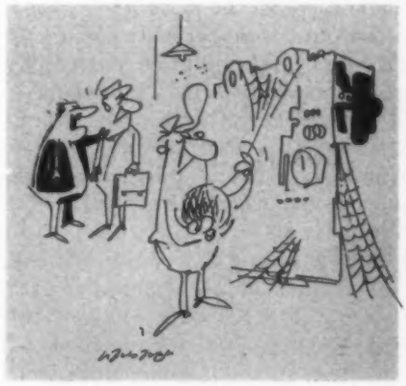
Where Masking Fails

This figure shows that the errors in both the cyan and magenta could be corrected with a single 40% mask in only one or two cases. While some of the cyans could be corrected, the same mask would undercorrect most of the magentas. From this, it becomes obvious why masking has failed to produce completely corrected separations and why it has not been more widely accepted.

This was the major revelation of the first phase of the study of the survey. The majority of the process cyans and magentas that had been used were poorly related to one another and to practical correction values.

Most Serious Masking Obstacle

This choice of separate, unrelated process inks to be used together is perhaps the most serious obstacle to success with masking. Here is what happens. Each separation negative contains two things: (1) Record of its own printing color and (2) Errors of the two other process inks. Most yellow process inks reflect enough red and green light that



". . . Well thanks for the big contract, . . . Now just as soon as we can make ready . . ."

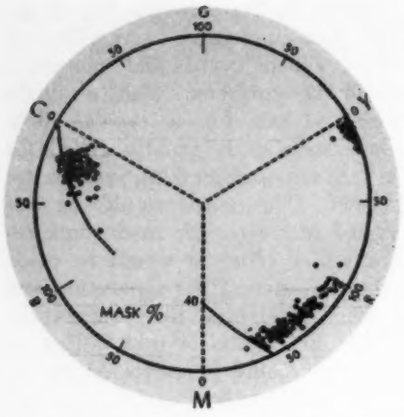


Fig. 3.—Lines show which pairs of cyan and magenta inks could be corrected with a single 40% mask.

they seldom create a masking problem in red and green filter separations. So, these separation negatives seldom have more than one ink error to mask for.

Cyan and magenta inks, however, are poor in their ability to reflect blue. The errors from these two inks must be corrected in the yellow printer or blue filter separation by masking. The errors can be measured and can be expressed as a color correction mask percentage.

This is done by measuring the density of both the magenta and cyan ink patches with the blue filter on the densitometer and again with the green filter. The ratios of these density readings are the mask percentages that are required. (Details on the procedure are in LTF's Bulletin No. 320, *The LTF Color Chart.*)

If the mask percentages for the magenta and cyan inks are the same, then a single mask made from the green filter record and used on the blue filter separation will completely correct both the cyan and magenta ink errors. In the LTF survey, however, only two sets of inks had these percentages within 10% of each other. In the majority of cases, if one error were perfectly corrected, the other error would be 40 to 50% undercorrected. This "unbalance" of the magentas and cyans being used together was typical. It was also in the wrong direction to be helped by using extra masks or filters.

It was during this work that we coined the term "balanced inks." Balanced inks are pairs of cyan and magenta inks that are matched, or which have the same blue-green density ratio. When balanced inks are used, and printed properly, one simple mask will correct both ink errors on the yellow printer.

Secondary Colors

As we mentioned at the start of this article (Requirement No. 6), a basic principle of three filter color separation photography is that only one specific hue of red, green, or blue will record with high density in the separation negative made through the filter of its own color and with equal low density in the other two separation negatives. Positive printers made from these negatives print the subtractive ink primaries (yellow, magenta, and cyan). The overprints of two process ink colors may then be expected to reproduce the original red, green, or blue hues for facsimile reproduction. Even if there are errors in

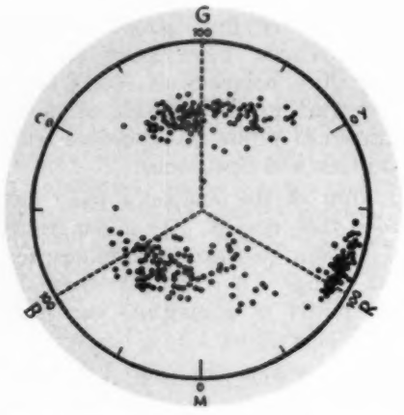


Fig. 4.—Typical reds, greens, and blues produced by two color overprints.

the hues of the separate ink primaries, a specific secondary hue between them (red, blue, or green) can be obtained by adjusting the strength of the two primaries.

Fig. 4 is a chart of the two color solid overprints that were expected to produce red, blue, and green.

The wide scattering of points clearly shows that there is no general understanding of or effort to control secondary colors in the industry.

Neutrals

The survey pointed out still another area where there is a lack of understanding and control. This is in the reproduction of neutrals (white and all shades of gray to solid black). As mentioned before (Requirement No. 7) we assume: (1) That these neutrals will record alike in the three separations, and (2) That the color strengths of the inks will be balanced or adjusted to reproduce neutral gray from the three overprinting colors.

In Fig. 5 is shown a chart of the three color overlaps in the survey. Again we see no evidence of controls to reproduce neutral gray which would plot at the center of the chart. Of course, if common, unbalanced masking systems are used, we could not expect to get neutral with three solids but some shade of brown. This is what is happening in most cases.

Predicting Overlap Colors

If trapping, transparency, and other factors are ideal, you can predict the hue and purity of the red, green, and blue produced by overprinting the primary inks. This is done by adding pairs of the densities that you measured through the red, green, and blue filters with the densitometer.

As part of the survey study, we calculated where reds, greens, and blues should fall on the chart and then compared them to the actual colors produced. Many were found to have shifted in hue from 10 to 50%. Many were closer to the color of the top ink although some shifted towards the color of the ink below.

At first we thought that the principal cause of this was over- or undertrapping. However, when we charted these hue shifts against trapping factors, we found that trapping was not the principal cause. Some inks trapping normally still shifted in hue strongly towards the top printing ink.

We got a much closer correlation when the hue shifts were charted against the additivity of the inks to blue light. (Additivity—the densities of individual solids through the

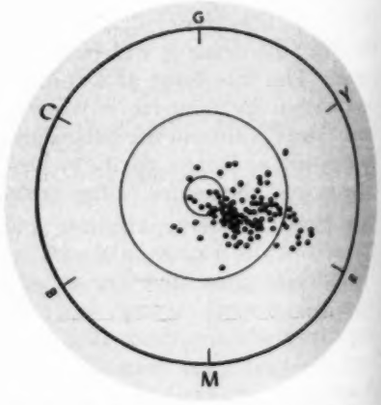


Fig. 5.—Typical hues of threee-color overlaps.

same color of filter added together should be equal to the density of these solids when overprinted.) A combined factor obtained by dividing the per cent trapping by the per cent additivity gave a much closer indication of the hue shifts of such overprints.

We compared the hue shifts of red overprints with different hues of magenta inks. All magentas or "process reds" with more than 50% hue error had considerable color shift because of increasing additivity failure. The practical importance of this is that whenever overprint colors shift towards the top color, single stage photographic masking overcorrects these areas. Too much yellow is removed from reds and browns and too much magenta is removed from purples and blues. With poor process ink hues, two stage masking is essential.

The partial opacity of reddish magentas and gray cyans contributes to additivity failure. However, the principal cause appears to be the surface scatter of light. Tests with inks that seemed to be perfectly transparent and which gave good additivity on coated papers, all failed when printed on dull offset papers. This indicates a basic need for improved relationships between ink and uncoated papers so that gloss is retained in colors printed on them.

The Matter of Tints

The color of halftone tints and tint mixtures were also often found to be different from simple predictions. In the test strip, 133 line screen tints were used. Proportionality failures were as expected in strips from single color presses. ("Proportionality" refers to the light absorption characteristics of a color from solids to light tints. If, for example, the red and green absorption of a series of cyan tints are in proportion to the absorption of the cyan solids the curve is a straight line and the proportionality is good.) Color tints on offset papers were closest to being proportional to the solid color values. Tints on coated papers were warmer and grayer than solids.

Test strips lithographed on opaque, white coated metal showed the highest proportionality differences. (Masking correction for these errors would require shouldering curves with positive masks or toed curves with negative masks.) There were some strips from four color presses that had excellent tint purity. They showed that soft inks had been spread to thinner ink films by repeated blanket pressures.

Miller's Latest Press is examined by executives of Miller Printing Machinery Co. The TPJ 23 in. by 36 in. two color-perfector offset press was recently introduced to the industry. Pictured from left to right are: C. O. Siebke, chief engineer; F. G. Betlock, vice president; W. G. Young, president, and A. E. Searle, Jr., vice president.

Three-Color Overprint Hues

Previous studies have given considerable attention to the shift of the hue of the three color gray scale tints to brown. The LTF survey confirmed this but only in strips that had been printed from single color presses. Many four color presses gave exactly the opposite shift. Their three color tint mixtures of equal dot sizes were progressively bluer than the solid overprints. With two color presses, it was typical for the hue of the three color equal dot size overprints to shift towards or away from green.

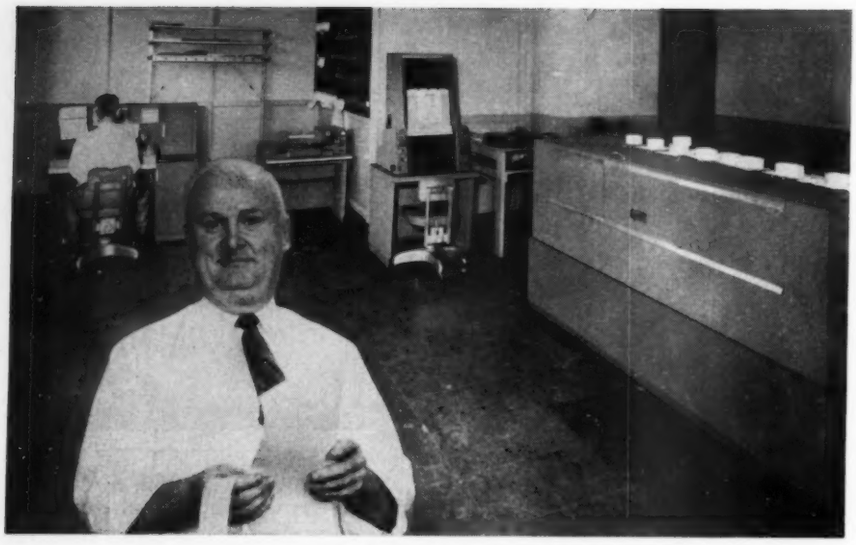
If we can intelligently control the peculiarities of wet ink transfer on four color presses we may be able to produce higher color quality than is now produced by single color presses. A very few test strips from four color presses showed neutral gray in all tone values in the scale and also, 100% trapping of magenta and cyan on yellow which produced full strength reds and greens. (A small controlled amount of cyan ink dot spread can neutralize the usual brown shift of a three color gray scale and also give purer light tints.)

In multicolor printing, some have the idea that wet inks won't trap fully on an undercolor unless some of the undercolor is removed. This may be important in letterpress where ink films are thicker. However, in lithographic printing, good trapping on some four color presses was observed when somewhat softer and carefully tack graded inks were used. Yellow, printed first, was just a little tackier than the other inks. To prevent too much dot spread, a softer magenta, trapping on yellow and producing strong reds, was run last.

Most four color presses showed moderate undertrapping, the lowest being about 80%. The survey showed that the typical performance of four color presses gave considerably less hue shift of overprint colors than typical single color presses. This being the case, a controlled degree of undertrapping could then be a plus quality factor since it would permit the use of less ex-

(*Continued on Page 62*)

Safety Contest Winners—Both the Dayton (O.) and York (Pa.) plants of Standard Register Co. were first place winners in the National Safety Council's Printing and Publishing Safety Contest for 1957. Standard Register executives pictured with the winner's plaque are, left to right: Kenneth P. Morse, executive vice president and general manager; Harry C. Heider, manager, York plant, and I. G. Ostendorf, safety director, Dayton plant.



William H. Ross, photocomposing superintendent at New York *Daily News*, is shown in foreground of this view of his department equipped with Linofilm photocomposition equipment.

Linofilm System Field Testing Reported by New York Daily News

By **WILLIAM A. ROSS,*** *Photocomposition Supt., New York* Daily News

NEARLY everyone having present or prospective use for photocomposition will be interested in the results of the past year's field testing of the Linofilm system at the New York *Daily News*.

This is how a story set by photocomposition for the rotogravure section is handled. Copy gets a tape number when it arrives in the photocomposing room. It is also dated and carries a guide line.

Each story is complete with text, captions, heads and credit lines. A typical story will have an 18 pt. Spartan Black head; 6 pt. Spartan Medium credit lines; text in 9 pt. Primer, 2 pt. leaded; and picture captions in 12 pt. Spartan Medium with Spartan Black run in.

After the copy has been recorded, it is keyboarded. The operator runs off about a foot of blank tape on the end on which he writes the guide line, date and the tape number. The tape is then run through the photo unit immediately or stored until needed.

Having been run through the Linofilm photo unit, the casset, or ccntainer for the exposed film or paper, is removed from the photo-unit magazine and taken into the darkroom. There the paper is processed.

Upon drying, the right-reading positive is put face-up on top of a piece of Bruning paper and put through a Copyflex photocopying machine at slow speed. The resulting proof, clear enough for proofreading and revising, is stamped First Proof and sent to the editorial department. The original also is stamped First Proof and filed.

Method for Revisions

When editorial returns the proof, the revisions are made at the keyboard. The operator writes a number on the revised proof where the revision is to be inserted and then writes the same number on the keyboard tape. The tape splicer is used to insert the revised lines in the original tape.

The tape is then re-run in the photo unit. The second print is handled the same way as the first. The Revised Proof is stapled to the First Proof and both are sent back to the editorial department. About 90% of the time this second proof is returned O.K. A second print is then taken, waxed and delivered, along with the proofs, to editorial.

At first, two corrected copies of each story were delivered to editorial. But experience showed that they were not necessary in all cases. So now, if a second or occasionally a third copy is needed, the corrected tape is merely re-run through the photo unit.

Tapes are stored for a period of four weeks.

Ad Composition

Though the photocomposition department of the *Daily News* has not yet handled live ads, they recently received some type faces required for ad composition and additional Linofilm grids are expected soon.

In order even to begin ad work, it was necessary for the *Daily News* to expand its composition room staff. A night shift was started and the training of two additional persons begun, one on the day shift and the other on the night shift. In general, the day shift will continue to handle rotogravure copy and the night shift will concentrate on setting advertising.

One early discovery made by the photocomposition department in handling advertising copy was an easy way to follow an advertiser's layout. Previously a hand-drawn layout had been made, showing type size and arrangement. This was time consuming and not always accurate. Now, a wrong reading positive of the layout is made and this is used for viewing in the Linofilm Composer reverse side out.

At present, the *Daily News* has one keyboard and about 30 grids, both "A" and "B" types. "A" grids cover six type sizes from 5 pt. through 9 pt., and "B" grids range from 10 pt. through 18 pt. sizes. Since the keyboard has positions for 18 grids, a plan was devised whereby it can be converted from a strictly roto text set-up to an arrangement for ad composition or dual purpose work depending upon the work load.

The Primer type face which is used in roto text is not used at all in ad work. So, by pulling eight grids of the Primer fonts from the keyboard and replacing them with such type faces as Poster Bodoni and Bodoni Bold, flexibility of keyboard is increased.

Another feature of the Linofilm system that holds great promise is the system of making corrections by

*From remarks delivered at Mid-Atlantic Newspaper Mechanical Conference, Pittsburgh, March 13-15.

the use of the tape splicer. We discovered we could change leading, change type sizes and alter type end-of-line signals at the splicer. These things are done quickly by a simple punch and thus the keyboard is kept free to produce tape.

Finally, the *Daily News* developed a method for controlling the amount of paper or film run-off at the photo unit, normally 6 or 8 in., depending on the type size of the last line. By adding several quad left signals to the end of a tape, the photo unit could be stopped and the paper or film advanced manually, saving considerable paper or film and, incidentally, necessitating less processing in the darkroom.

The *Daily News* permanently stores tapes that are certain to be re-run. For small takes which are to stand as composed, that piece of copy is made into a negative from the positive by contact in the photo unit, and positive prints are made as needed. Better results are obtained on lengthy takes, experience has shown, by storing the tape and making paper positives as needed.

ANPA Readies Atlantic City Program

A quick but thorough-going survey of fundamental newspaper production problems and new equipment is the chief aim of the 30th annual American Newspaper Publishers Assoc. Mechanical Conference, to be held June 22-25, at Chalfonte-Haddon Hall Hotel, Atlantic City, N. J.

Highlights of this year's program will include a new *What's New in Equipment* session; two full sessions on ROP color printing techniques; two sessions on black and white production, stressing the problems common to most mechanical departments; another *Nut & Bolt* machinists' session (first one was held in Chicago last year); an engraving session featuring latest developments; and a session on advertising problems as related to newspaper printing.

Also among the highlights will be another complete exhibit of newspaper production equipment and supplies. Those in attendance will be provided ample opportunity to visit the exhibits during the conference. The exhibit opens June 22.

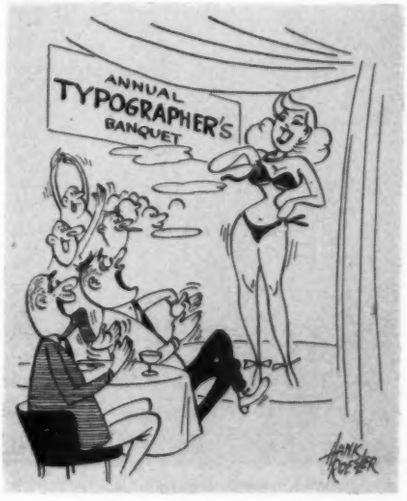
Keynote address at the conference will be given by D. Tennant Bryan, president and publisher, Richmond (Va.) *Times-Dispatch* and *News Leader*, at the Monday opening session, 9:30 a.m., June 23.

New Equipment Reports

The remainder of the opening session, to be moderated by J. Harold Mintun, production manager, Pittsburgh *Press* and chairman of the ANPA Mechanical Committee, will be devoted to a *What's New in Equipment* feature. This will be comprised of short presentations by manufacturers and suppliers, including American Type Founders Co.; Cheshire Inc.; Cutler-Hammer, Inc.; Electric Eye Equipment Co.; General Electric Co.; R. Hoe & Co. Inc.; Intertype Corp.; C. M. Kemp Mfg. Co.; Kenro Graphics Inc.; Lanston Monotype Co.; Master Etching Machine Co.; Natural Lighting Corp.; Sta-Hi Corp.; Tasope Co.; Tingue, Brown & Co.; U. S. Printing Ink Corp.; Unitronics Inc.; Wiretyer Corp., and Wood Newspaper Machinery Corp.

W. R. Coddington, Chicago *Daily News;* Henry Garland, Pittsburgh *Post-Gazette;* and Donald V. Weber, Houston (Tex.) *Chronicle* will be chairmen of two ROP color sessions at 2:00 p.m. and 8:00 p.m., Monday, June 23.

The two sessions on black and white production at 9:30 a.m. and 2:00 p.m. on Tuesday, June 24, will be moderated by W. E. Gibbons, Portland (Ore.) *Oregon Journal;* George F. Marshall, Portland (Me.) *Press Herald and Express;* Robert C. Nelson, Detroit *News;* and J. H. Zerbey, III, Pottsville (Pa.) *Republican,* ANPA Committee members.



"More white space! More white space!"

Will Discuss Research

Randall Barton, Phoenix (Ariz.) *Republican and Gazette,* will be chairman of the engraving and research session on Wednesday morning, June 25, at 9:30 a.m. This will include a progress report on the ANPA research program. There will be descriptions of the Kromolite and Fluorographic processes; improvements in high speed etching; a progress report from DuPont on the new photopolymer (plastic) plate; plus time for discussion on all phases of photoengraving and allied fields.

The advertising session at 2:00 p.m., Wednesday, June 25, will be chairmanned by James L. Stott, Richmond (Va.) *Times-Dispatch* and *News Leader.* Since there never can be enough communication between the advertising agency and the mechanical department, this will be a highly informative and valuable session. Ad agency executives will form a speaking panel.

Nut & Bolt Session

The machinists' *Nut & Bolt* session will be held at a special Sunday night meeting, 8:30 p.m., June 22. It will be moderated by Ted Gardner, Indianapolis (Ind.) *Star* and *News,* who will be assisted by a panel of four well-qualified machinists. This is where the tough machinists' problems get aired and straight answers are given.

A ladies' program is being planned under the direction of Mrs. Marie Weiskittel, wife of Earl Weiskittel, pressroom superintendent, Youngstown (O.) *Vindicator.* Arrangements will include a card party on Monday evening, June 23; a luncheon on Tuesday, June 24, sponsored by R. Hoe & Co.; and an informal brunch on Wednesday morning, June 25.

Additional information about the conference can be obtained from Richard E. Lewis, manager, Mechanical Dept., American Newspaper Publishers Assoc., 370 Lexington Ave., New York 17, N. Y.

Printing on FOIL *by Gravure*

By ADAM HENRI REISER, *Eastern Editor*

SOME time ago we reported a talk on gravure delivered before the New York Craftsmen's Club. At that time, the theme was developed that millions of flip-top cigarette containers and other packaging materials were being produced by rotogravure printing. The great speeds possible in this method with its continuous line production of printing, die-cutting and folding was said to be one of the reasons for the swing to rotogravure for this kind of work.

Now we report another phase of gravure printing—this one on sheetfed foil produced at J. C. Dillon Co., Long Island City, N. Y. This is but one specialty of Dillon's operations which embraces letterpress, gravure and offset printing in the quality field.

High quality gravure printing on sheetfed presses, either on paper or board, is a run-of-the-mill job at Dillon. High quality gravure printing on aluminum foil is a specialty developed at Dillon over the past several years.

Others, too, turned to gravure for printing on foil when the metal became available. This method of printing with its highly volatile inks, combined with the ability to get good ink coverage, coupled with rapid drying seemed a natural for foil.

While foil costs more than paper, its use provides the ideal method for obtaining a true metallic effect—because it actually is metal. Foil is now produced in aluminum, gold and a number of tinted colors. Other colors with typical metallic lustre and reflectiveness may be achieved by over-printing with transparent inks on foil.

Preparation of Artwork

Preparation of the artwork requires special attention, the method to be used depending upon the requirements of the job. Three- or four-color separations may be produced from Kodachrome or Ektachrome transparencies. Or, overlays may be prepared on mechanicals much as in other reproduction processes. The difference, however, lies in making use of the sheen of the foil, for the highly reflective surfaces and shining properties of the metal sometimes simulates the effect of the product. Consequently the foil may want to be exposed in certain areas. In that case, the artwork must be created so as to keep that area open for overprinting, at least in some of the colors.

The first color printed down is usually a coating of white where it is decided to provide a white background for the succeeding impressions. At times a varnish coat may be run to cover the job or portions of it, this being run as the last printing.

There will be a difference too, in the etching of the image on copper for foil printing. It is interesting to note that difference, when comparing an impression made on paper with one on foil from the same plate. The impression taken on paper appears smudged or over charged when taken under the same conditions that produce a good impression on foil.

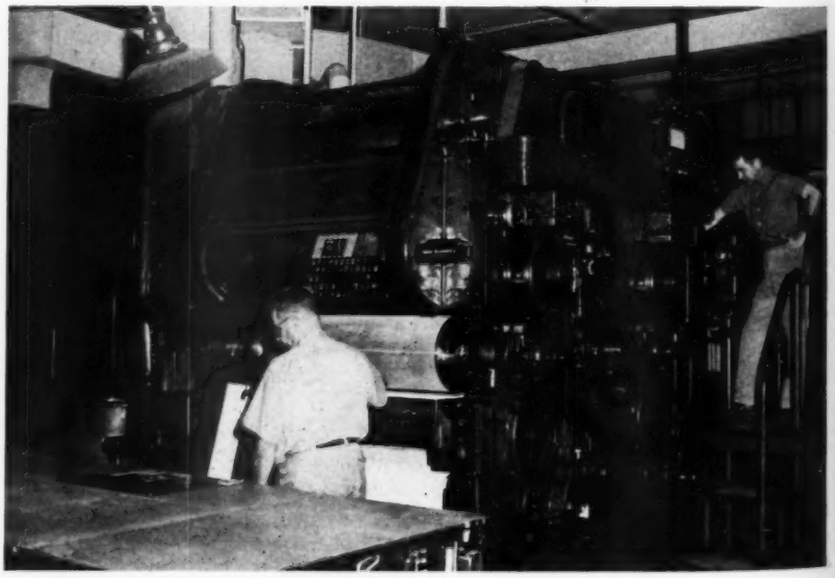
Any of the preparatory methods used for conventional gravure plates may be used in the production of the copper plate for foil printing. Plates have been run successfully produced by the Gresham method, or the Dultgen process, or, when produced by conventional gravure methods. Copper plates are used with a chrome coating applied as dictated by the job, or, occasionally by the demands of the ink.

Copper plates used for this work are strapped around the cylinder of the press, etched copper cylinders rarely being used for sheetfed gravure. Most of this work is in the short-run to medium-run field.

How Foil is Supplied

Foil upon which the printing is run comes to the pressroom backed up with paper or cardboard to meet customer specifications. Some foil has been run with a comparatively thin layer of paper as a backer. Other orders may require a cardboard backing sheet. This backing sheet is laminated or glued over the entire area of the foil rather than just fastened along the edges.

As might be suspected, the field of metallic foil for printing is a



Printing on aluminum foil is performed in the plant of J. C. Dillon Co., Long Island City, N. Y., on this Miehle sheetfed gravure press.

highly specialized one, there being a limited number of suppliers of the metal for printing. The surface of the foil is sized for printing so it may properly receive the ink impression. Sizing is applied by the foil supplier.

While sizing plays an important part in the proper lay of the ink on the foil, the coating of white applied in the press, is highly important. For example, it is used to provide a background for process work.

Correct Inks Are Important

Inks are another big factor in this process. To be used successfully a good ink must have flowing power. The slower speeds of sheetfed gravure presses, permit the use of better pigmented inks with their slower drying properties.

Ink drying is slightly different for foil printing than it is for paper surfaces. A certain amount of penetration takes place when the ink impression is applied to paper. On foil, however, the ink must adhere to the foil, evaporation of the carrier for the pigment taking place in the drying operation. No penetration of the stock as we know it on paper, takes place on foil.

To expedite the drying process, each sheet after it receives its impression of ink, passes under a series of fans on its move from the impression cylinder to the delivery pile. This procedure supplies the air flow helpful to the drying process.

The relatively slow press speeds in sheetfed gravure, permit production of a very high grade of printing. High fidelity of tone in the reproduction and the beauty of the printing on foil has led to widespread use of the gravure method of printing in the packaging field.

It should be remembered that highly skilled personnel is essential for the successful operation of the equipment. Their help and experience has smoothed out many rough spots and aided in maintaining steady progress in the method.

In closing, it might be worthwhile pointing out the difference between sheetfed gravure and webfed rotogravure. Going to letterpress for comparison, the sheetfed gravure press might be likened to a 25 in. by 38 in. sheetfed letterpress, while the rotogravure press compares with a large multicolor webfed rotary letterpress.

At times the two gravure methods are used in combination, each used for that portion of a production piece for which it is suited. For example, in the changeover of a soap wrapper from paper to foil, the sheetfed gravure method was used to produce in moderate quantity a handsome process color poster on foil to point up the new wrapper. Rotogravure was used to produce the wrappers themselves.

Glessner House Purchased by LTF

Lithographic Technical Foundation marked a memorable occasion on April 2nd when it received title of ownership for one of Chicago's architectural landmarks, Glessner House, 1800 South Prairie Ave., as a permanent educational and research center. LTF purchased the building from the Illinois Institute of Technology, with which it has had close research and educational cooperation for 15 years.

At a ceremony in the Lake Shore Club, Chicago, a check for the full purchase price was exchanged for the deed. Caleb Canby of Dellstream, Schiff, Hardin, Waite & Dorschel represented IIT, as its attorney, and Wayne Swonk of Kirkland, Fleming, Green, Martin & Ellis represented LTF.

LTF is a 34 year old endowed non-profit scientific research and educational institution. It is now international with over 2000 plants, individual employees, equipment manufacturers and suppliers as members and contributors. Two hundred of its members are in foreign countries.

Glessner House has housed the Foundation's laboratories and a special school since 1945. High level intensive courses, seminars, and visual closed circuit TV and colored motion picture demonstrations to improve lithography emanate from there. Since its beginning LTF staff members have written more than 150 publications.

The purchase followed a thorough search for the best location of the Foundation's facilities. Many of its annual meetings of members, officers, and directors, research, educational and other committee meetings are held there. The staff of Glessner House includes the following: Wade Griswold, executive director, Michael H. Bruno, manager of research; Jack White, business manager, research laboratory, and Robert Reed, senior consultant.

The Foundation has an endowment of over $1 million and an annual budget of over $350 thousand. Additional funds, however, are currently being raised for needed alterations of the building, increases in personnel and over $40 thousand for necessary scientific equipment and for a revolving fund.

Signing the deed for LTF's purchase of Glessner House are, seated left to right, Elmer G. Voigt, Western Printing & Litho Co., Racine, Wis., and Ray Spaeth, Illinois Institute of Technology. Standing are: Louis Hraback, Sleight & Hellmuth, Inc., Chicago; B. E. Callahan, Inland Lithograph Co., Chicago; James Armitage, Inland Press, Inc., Chicago, Don H. Black, Western Printing & Litho Co., Racine, Wis.; Elliott Donnelley, R. R. Donnelley, & Sons, Chicago, and Leonard H. Knopf, Meyercord Company, Chicago.

Printable Faces On Display Slugs

By THEODORE (TED) GARDINER*

**Chief Composing Machinist, Indianapolis (Ind.)* Star-News

CERTAINLY, you may have trouble getting a good type face on 24, 30 and 36 pt. slugs, especially when a good face is required for direct printing. Before you can expect to get good type faces from your linecasting machines, the casting apparatus must be put in good condition. To produce large point size slugs with clear type faces from the machines the following are required: Good mouthpiece with proper ventage, good fitting pot pump plunger, smooth plunger action, pot crucible plunger well that is not egg-shaped, crucible throat free from oxides and dross, no dross buildup back of the mouthpiece, correct position of plunger in relation to well metal feed holes, and good pot mouthpiece-mold casting lockup.

To all competent machinists, the foregoing mentioned necessities would be checked automatically. We must take into consideration this article has been prepared for the lesser skilled machinists. So let us deal briefly with each subject.

Pot Leg Bushings

Before discussing any further details regarding putting the metal pot mouthpiece in proper adjustment, perhaps it would be well to mention a rather unusual circumstance. Be sure that the pot leg bushings are properly lubricated with oil. At this time note the front and back relationship of the pot leg tines with the bushings. There should always be some clearance here.

When the machine was new, original position of the pot legs in relation to the bushings (front to back) was approximate. That is, the legs straddled the bushings with clearance about equal from front to back.

Now, if the pot leg adjustments have been manhandled at one time or another, the adjusting screws may have been turned so that the tines in one or both legs will be positioned with little or no clearance between leg and bushing. Thus, if there is no clearance between the front of the bushing and the pot leg (both left and right) the top surface of the mouthpiece will bear against the mold heavily. In this case, the lower surface of the mouthpiece will not contact the mold equally with the top and trouble with ventage will be had. Conversely, if there is little clearance between the pot leg rear tine and the bushing, the lower surface of the mouthpiece will bear heavily against the mold. In such case, try to adjust the front and back pot leg adjusting screws so there will be clearance between pot leg tines and left and right bushings.

At this time also watch to see that the pot lever cam roll rides centrally on the pot cam. In some cases, it may be necessary to shift position of the pot lever on its shaft sideways by means of thin steel washers to permit the pot lever cam roll to ride fully against the pot cam.

It is not likely, however, that maladjustment will have occurred except on older machines.

Pot Crucible Plunger and Well

The function of the pot pump plunger is to force the metal through the crucible throat and mouthpiece into the mold. If the metal boils up around the rod as the plunger descends it indicates a loose fitting plunger and possibly a worn well. With 30 and 36 pt. slugs you cannot afford to lose any metal from the well. With large slugs it is necessary to pump as much metal as possible into the mold.

If the pot crucible well is worn, the well will have to be reamed out and a new plunger (oversize diameter) fitted into the well. In reaming out the well, always do it while the crucible is cold. Also, fit the plunger in the well with approx. 0.002 in. clearance at this time. (Oversize plungers of slightly different diameters can be secured from the suppliers.) The alternative to fitting in an oversize plunger is to install a new crucible and plunger.

While the machine is standing in normal position, be sure the lower plunger ring is positioned just above the well feed holes. A worn pot pump cam or cam roll, or both, will cause the bottom ring of the plunger to hang too low. This will block the flow of metal into the well after each cast. Also, if the pin hole in the plunger rod is enlarged due to wear, the plunger ac-

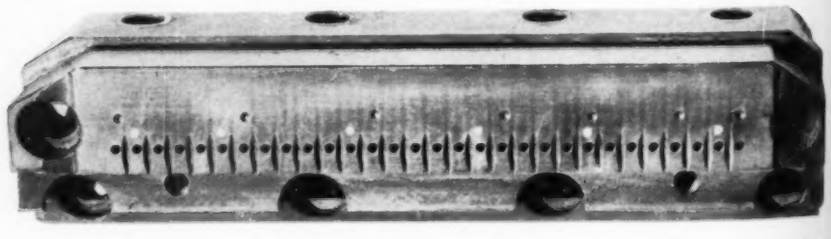


Fig. 1.—This is a metal pot display mouthpiece for linecomposing machine metal pot. The row of six light dots are used to indicate approx. where auxiliary jet holes are drilled in the mouthpiece at an angle of 30 deg. opposite the rib cavities in the recessed mold cap. The holes in the upper row are only drill point deep. These cause buttons to be cast on the ribs and are trimmed by the back knife to bring the ribs in the slug to same height as the body.

Fig. 2.—The upper section is used to illustrate the defective face of a 36 pt. 30 pica display slug cast in a recessed mold. Note that the lower areas of the letter characters cast with a disturbed or curleycue face. Also note that the upper areas of the characters cast with comparatively smooth type face. After placing the entire casting mechanism in good shape, slugs were cast with clearly printable faces as shown by lower slug. It is obvious that more satisfactory results are obtainable from the lower slug.

tion will be faulty. The plunger action during the cast must be smooth and forceful. It may be necessary to drill a No. 50 twist drill hole in the bottom of the plunger or to adjust the pressure relief valve on a Linotype plunger. This relieves some of the downstroke pressure so the plunger can complete its stroke slowly and keep continuous pressure on the molten metal immediately after the main part of the casting stroke.

The plunger should be cleaned twice daily as an added precaution against getting bad slugs. Be sure to keep the level of the metal in the pot to about ½ in. below the top rim of the crucible and keep sufficient pressure on the pot pump spring. Particular attention should be paid to the temperature of the metal in the pot and the mouthpiece temperature.

Pot Mouthpiece-Mold Lockup

In going over the pot mouthpiece-mold lockup, it is important not to have too much ventage on the mouthpiece or too much pressure on the pot lever spring. The pot leg bushings should be kept well oiled. Proper lockup pressure of the mouthpiece against the mold can be determined by the compression of the pot lever eyebolt spring during the casting of the slug. There should be approx. 3/16 in. space between pot lever and eyebolt nut during the cast.

Pot Crucible Mouthpiece and Throat

Another point to remember is to take a good look at the mouthpiece on the machine. If the throat of the pot crucible is clean, then clean out the mouthpiece jet holes *slightly* by using a 6/0 taper reamer, but be sure not to enlarge the holes if possible. This not only cleans out the holes but maintains the cone shape to provide smoother breakaway of the slug from the mouthpiece after the cast.

Scrape the vent slots with a sharp venting tool until they are clean. If you are putting on a new mouthpiece, do not cut the ventage until all other adjustments have been made. Then hone the mouthpiece with a stone for trueness—not too much, but enough to take out the high spots and clean the surface.

If the throat has not been cleaned for some time, remove the mouthpiece and clean the throat. Once the above is taken care of, the machine should be in condition to produce quality slugs which will provide satisfactory reproduction.

The first time I was confronted with the problem of adjusting the

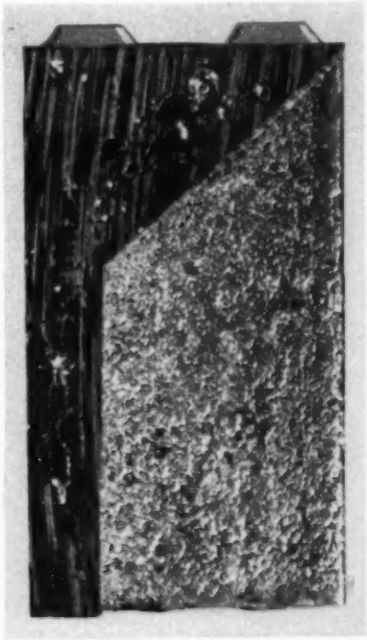


Fig. 3.—This 36 pt. recessed display slug has been sawed through one of the ribs to show location of possible air bells in the slug structure. All machinists try to maintain the casting part of the machine so that the air bells (if any) will be dissipated through the slug body away from the printing face.

casting apparatus in trying to produce an all-over smooth face on a 36 pt. slug, I was puzzled. The bottom parts of the letter characters were chilled, making it almost impossible to get a decent print from them.

As I examined one of the slugs, I asked myself: "Why?" At that time there was a single row of jet holes in the mouthpiece aligned at the bottom of a 3 pica body size mold. Now, when molten metal is flushed into the 36 pt. mold against the matrices the metal stream flows more or less horizontally. It first strikes the top of the matrix character (which is in inverted position) and then builds up (or is churned around) to fill the mold. So you have a difference in face from top to bottom of the letter characters because the metal solidifies immediately it strikes the face of the matrix, and chill designs (curleycues) are formed along the lower half of the type face. (Remember that the type characters are cast in upside-down position.)

Doesn't it seem logical that if you want to correct this condition, you would try to flush the metal into the mold in such a way as to fill the mold more quickly in order to prevent chilling of the lower part of the characters?

Suppose then, we would drill several No. 52 drill size holes in the mouthpiece about 12 or 14 pts. above the present horizontal holes at an angle of approx. 30 deg., so as to provide two streams of metal which will strike the upper and lower surfaces of the letter characters simultaneously. These extra jet holes are drilled in the mouthpiece opposite the rib cavities in the mold cap. So far, I have found it necessary to drill only five or six extra holes over the 30 pica length of the mouthpiece. However, more may be required on other machines

according to rib cavities in the mold cap.

These Items Need Attention

Here are a number of items that should be mentioned:

In our plant, we use a tin content of 4.35%, which is satisfactory in maintaining the correct fluidity of type metal.

Make sure the plunger downstroke is even with sufficient followthrough at the lower part of the stroke to fill the mold quickly and fully. Our 36 pt. slugs, 30 picas long, weigh 7 oz.

Another important point is not to use the quick-drop attachment on the plunger when casting 24, 30 and 36 pt. slugs. Some machines work fine with the quick-drop, others do not. But on the larger type faces, all the plunger stroke you can get is needed. Sometimes it is advisable to cut back the pot pump cam 1/8 or 3/16 in. at the drop off point (initial part of the stroke) to permit the plunger to start its downstroke sooner. However, in no case should the plunger start pumping metal until the casting lockup of pot mouthpiece against the mold has been completed.

In composing rooms where a goodly number of overhang characters are cast on slugs, the tin content of the metal should be increased in order to enable the metal with its increased fluidity to penetrate more readily approx. 0.045 in. beyond the body of the mold and into the overhang section of the matrix. All machines used for overhang casting should be given extra care in plunger cleaning and proper mouthpiece ventage and clean jet holes. If possible, hold the ventage to a minimum but sufficient to permit a quick flush into the matrix overhang.

At any rate, I do not think the cause of inferior type faces on overhang characters is due to the lack of mouthpiece holes so much as the fluidity of the metal and the way it is delivered through the mold to the matrices.

It has been suggested by other machinists that a No. 48 twist drill hole be used instead of the row of No. 52 size holes. Well, this might work, but I have never tried it. It would probably do all right as long as you were not casting 5 pt. slugs on the machine.

RESEARCH

Du Pont Conducts Paper Studies—Du Pont Company has announced an agreement to lease certain pilot plant facilities of Riegel Paper Corp. for development work on the use of synthetic fibers in paper. Results of the test will be released to the paper industry to assist paper makers in taking advantages of the properties of synthetic fibers, reports Du Pont. Among the properties said to be contributed by synthetic fibers are improved fold resistance, tear strength, dimensional stability, and resistance to mildew.

National Lecturer—Dr. Albert C. Zettlemoyer, professor of chemistry at Lehigh University, Bethlehem, Pa., has been named as lecturer for Sigma Xi, national honorary research society. He will lecture before colleges and industrial centers. Zettlemoyer is director of the National Printing Ink Research Institute at Lehigh.

Imperial Names Research Director—Daniel L. Goffredo has been appointed research director for Imperial Type Metal Co. He will conduct future research on the company's Vitaplate-VitasolV powderless etching process, as well as other Imperial metal developments for the printing industry. He was formerly on the research staff of American Newspaper Publishers Assoc.

GOFFREDO PAULSEN

Hamilton Research Director—Paul L. Paulsen has been named director of research and development for Hamilton Manufacturing Co. Paulsen, formerly director of product engineering, replaces the late C. S. O'Neil. He will supervise research activities for all Hamilton product lines, including printing equipment.

DuPont Lab Assignment—Robert J. Trinkle, jr., has been assigned to the printing development laboratory of the photo products department, E. I. du Pont de Nemours & Co. He will assist in the development of the photopolymer printing plate.

Xerography at World's Fair—The National Science Foundation has invited Haloid Company to show Haloid's development of xerographic printing in the International Hall of Science at the Brussels World's Fair, Apr. 17 to Oct. 19. The printing process, invented by Chester F. Carlson, is a revolutionary way of creating images, based upon two fundamental forms of energy, light and electricity. The exhibit (above) carries explanations of the process in three languages. Interior (inset) contains automatic demonstration of xerography, which may be activated by a push button.

Lookit 'im go . . .

. . . with that Linotype Comet! You know why? Comets have designed-in speed, *more than you can get out of any other machine!*

That extra-responsive keyboard that operators really appreciate is just one of the many features.

Easy maintenance—and that at a minimum, too—is another designed-in benefit that means extra composing room dividends.

For steady, smooth, easy volumes of straight matter, Comet's out in front all by itself.

Mergenthaler Linotype Company, 29 Ryerson Street, Brooklyn 5, N. Y.

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Color Takes the Spotlight
At Mid-Atlantic Mechanical Meeting

Newspaper executives hear of ways to start and improve daily ROP color processes • By STAFF WRITER

STILL an interesting and challenging occupation, the production of the daily newspaper is bound to get even more "colorful" in the years ahead. That was the opinion of many informed speakers at the Mid-Atlantic Newspaper Mechanical Conference held at Penn-Sheraton Hotel in Pittsburgh, March 13-15.

A good share of the prepared talks concerned means for starting and improving color reproduction. For example, James M. Godbold, director of photography, Minneapolis (Minn.) *Star-Tribune* said: "When national magazines can beat the color deadlines of the daily newspapers, then it's time to look at our deadlines."

Instrumentation Will Never Replace the Pressman

Carl M. Noble, president, Electric Eye Equipment Co., was more concerned with the relation between the human element and instrumentation in improved ROP color production. "I have practically lived in pressrooms the last 13 years," he said. "We are never, in my opinion, going to replace the qualified pressman by instrumentation. The craftsmanship which is necessary there cannot be duplicated or substituted by controls and machines.

"Your problem of running register control is far more complex than that of rotogravure, we've proved this by instrumentation, because your plates do not make constant contact with the impression cylinder during the 360 degree cycle."

An Intriguing Problem

Noble continued: "Your problem would be more easily solved if color plates were in constant contact with the web. This make and break type of contact offers one of the most intriguing problems, we've ever been called upon to study.

"In the first place, if you want to print in good register you'd better make sure that you have uniform unwind tension. I didn't say 'perfect' tension. None such exists. You can, however, see to it that the reel tension is adjusted to the manufacturer's specifications and that the whole reel mechanism is in good repair.

"How long has it been since the packing has been calipered? Uniform tension begins at the reel, but every time the web is contacted, in the printing stations, new forces act upon the tension. We have proved that varying packing thicknesses can cause more problems in registry than any other factor.

"What about the gain on the pull rollers at the folder?" Noble asked. "Is the web very tight between the last printing unit and the folder? Is there evidence of cycling tension there? You can tell by watching the web. If it flutters excessively indicating that the pull rollers are demanding too much and the web is alternately slipping and tightening, I can tell you for sure you have a registry problem between the next-to-last and last printing cylinder.

"Do you make automatic splices? If you do, does the white roll man adjust the core and running tension so there is no sudden shift in tension when you make the paste? . . . There are too many things going on right at this moment for the man at the folder to do a good job on all. Automatic control will take care of 90% of the registry variation and give a quality you never thought possible during the period immediately preceding and succeeding the splice."

Increased Use of Color

Noble concluded: "If you're going to increase the use and acceptance of color, you're going to have to make some waste. You're going to have to sort papers at splices and make sure that during start-ups and slow-downs no papers reach the mailing room with poor color or poor color registry.

"I predict that every one of you will have automatic register control as a must in the next few years. You will have other automatic devices as a matter of course because you are now competing with the finest color printing in the world and soon you'll be competing full

The smiling faces at the Mid-Atlantic Conference belong to, left to right, Victor D. Shanahan, Point Pleasant (N. J.) *Ocean County Leader*; Conference Co-chairman Herbert Cox, Allentown (Pa.) *Call-Chronicle*; and J. Harold Mintun, Pittsburgh *Press*.

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DC PRESS DRIVE

Leaders in the graphic art industry have expressed the opinion that the Hurletron DC Press Drive is 10 years ahead of the field. Engineered to provide field proven, non-moving components, the Hurletron DC Press Drive reduces to nil the possibility of shut downs due to faulty mechanical operation, dirty relay contacts, or inadequate maintenance. The Hurletron DC Press Drive requires no special control room ventilation, no water cooling, no extra inching motors, no external clutching, and yet is economical to purchase, economical to operate, and economical to maintain.

Electric Eye Equipment Company

Danville, Illinois

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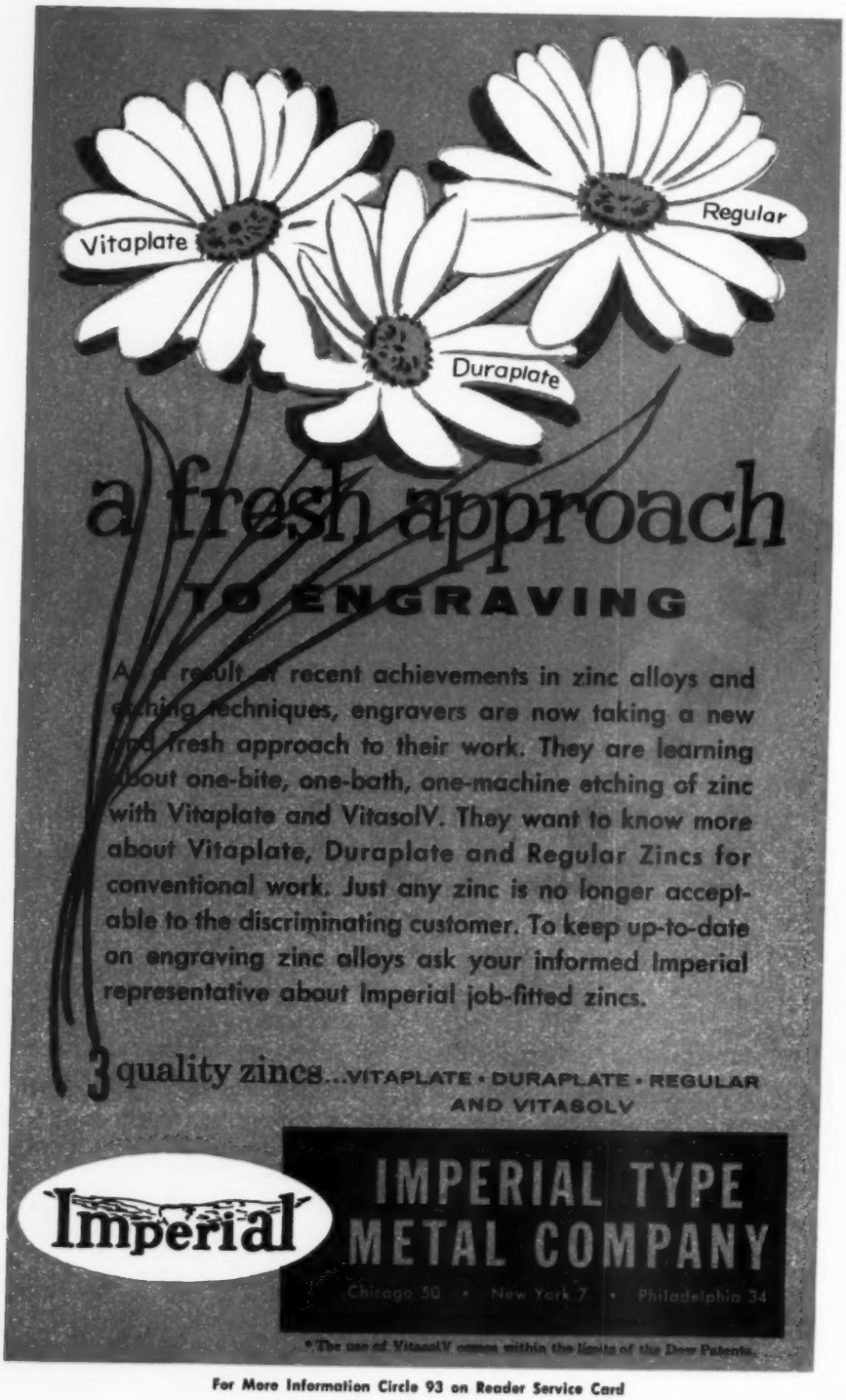
time with high quality color television. As never before you will have to provide competitive color quality."

Sobering Alternatives

Warren H. Detwiler, mechanical superintendent, Lancaster (Pa.) Newspapers Inc., sounded a challenge and noted two alternatives in connection with newspaper ROP color: "Newspapers handling color can bungle, too, if they lack knowledge, lack equipment, or lack time to do a good job. Any of these things can burst our balloon and dissipate profit in thin air. Color must register perfectly in the mind of the reader and if it does, its effectiveness will soar upwards."

Detwiler concluded: "Color is like perfume—a little of it applied properly and the effectiveness is unbelievable. A woman who saturates herself, however, drives you away. An advertiser who buys color and wants a bucket full to get his full measure is just deodorizing himself out of business. . . Here is color in our hands. It is a challenge to our mechanical ingenuity. We can turn it into profit, or it can be so much red ink on the loss side of the ledger."


Vitaplate
Duraplate
Regular
a fresh approach
TO ENGRAVING
As a result of recent achievements in zinc alloys and etching techniques, engravers are now taking a new and fresh approach to their work. They are learning about one-bite, one-bath, one-machine etching of zinc with Vitaplate and VitasolV. They want to know more about Vitaplate, Duraplate and Regular Zincs for conventional work. Just any zinc is no longer acceptable to the discriminating customer. To keep up-to-date on engraving zinc alloys ask your informed Imperial representative about Imperial job-fitted zincs.
3 quality zincs...VITAPLATE • DURAPLATE • REGULAR AND VITASOLV
Imperial
IMPERIAL TYPE METAL COMPANY
Chicago 50 • New York 7 • Philadelphia 34
* The use of VitasolV comes within the limits of the Dow Patents.
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Two-Color ROP

While recognizing that two-color work does not represent the "ultimate" in ROP color printing, Richard Little, III, promotion manager, Scranton (Pa.) *Tribune*, maintained that, for papers that couldn't handle any more, even that much color, brightened up fashion ads and seasonal promotions. It increased chances, he said, of running an extra 500 or 1000 inches over the course of a year for that color-conscious advertiser.

Little described his press procedure for running two-color work on a Duplex press of four units, four-plate wide with double folders, vintage about 1920, as follows: "We have a standard four-page black fountain permanently mounted in back of one of our regular fountains. The color fountain is equipped with separators and individual ductor rollers and feed action.

"We have ductor rollers cut for the color fountain so that color can be used in any position or combination of positions on the cylinder. And our intermediate and vibrator rollers are separate in the center to permit use of color on one side and black on the other. The finished color plates are put on the color cylinder in the proper position (one on each side) and locked up with the dummy plates."

The speaker continued: "The sheet (from a half roll) is led through the first impression cylinder on the working side of the press to pick up the two black first impression pages; then through the regular lead into the second impression where it picks up the first color, up and through a set of compensating rollers, up and over a drag roller, through a pair of angle bars which carry the sheet to the off-side of the press, down and through the color cylinder to pick up the second color; up and through another set of compensators, over to the next unit (skipping the first impression cylinder), and through the second impression cylinder where it picks up the black on the color page and its companion (lock up) page."

"In two color," Little said, "we have a minimum deadline of a week for the original order and a copy deadline of 72 hours. Corrected proofs must be back in our hands 48 hours before publication."

Powderless Etching Figures

Second place contender for attention at the Mid-Atlantic Mechanical Conference was powderless etching processes.

The stage was set for introduction of the Dow Etching Process at the Baltimore (Md.) *Sun* when the production load reached the etching capacity said Charles Geisel, assistant photoengraving foreman. There was too much work for six etchers to handle on one work shift; space was cramped.

With the Dow equipment, he reported, production greatly increased: In 1949, during the months of November and December, the night shift turned out 847 18 in. by 22 in. combination etched plates; in 1956, for the same two-month period, 1228 plates were completed with the same men and equipment. For November and December of 1957, "we etched more than 1335 plates with considerably less overtime with never more than four etchers working on the night shift." said Geisel.

Etching Procedure

Zinc plates to be etched in the Dow Machine are prepared for printing in much the same way as for conventional etching. The one change made was to reduce whirling speed about 30%, leaving a heavier working top.

"The first step in etching is the burn-in," said Geisel. "It is important that the plate is heated to approx. 350 deg. An easy method is to heat until the top just starts to fade in color, or about double the time of a powder burn-in. If the plate is under burned the top may break during etching. The plate is cooled in the conventional manner and is ready for spotting or retouching any necessary areas. All open metal is painted out. This not only saves the bath and permits it to run cooler, but seems to produce a cleaner flat. The plate is again heated sufficiently to dry the staging solution.

"The next step is de-scumming the plate. We use a mixture of potassium hydroxide 12 oz. and potassium permanganate 2 oz. to a gallon of water and immerse plate in solution for a period of 2 min. The plate is removed, rinsed under the tap and further de-scummed with a solution of 20% nitric acid. We found the extra acid de-scum produced cleaner plates.

"The plate is then treated with a 10% solution of sulphuric acid as a conditioner. This was found to eliminate nickel spots or unetched areas almost 100%.

"The sulphuric acid solution is drained, but not rinsed off the plate. After carefully wiping the clamps, to avoid any of the bath prematurely spotting the plate, it is then placed in the machine for etching. Combination plates are started at a run of 12 min. to produce a depth of approx. 0.030 in. in open areas and 0.005 in. to 0.006 in. in tones."

Pictured in the Mid-Atlantic Conference's exhibit area are, left to right, Conference Co-chairmen Howard G. Noble, mechanical superintendent, Long Branch (N. J.) *Daily Record*, and Herbert Cox, production manager, Allentown (Pa.) *Call-Chronicle*; with Alan G. Nicholas, publisher, Pittsburgh *Sun-Telegraph*.

At the Mid-Atlantic Conference registration desk are, left to right, Henry Garland, Pittsburgh *Post Gazette*; William H. Keller, Philadelphia *Daily News*; and Harry Burris, Harrisburg (Pa.) *Patriot-News*.

A Nolan 2 T. remelt furnace, featuring a newly-introduced Partlow Model MFS temperature control, was exhibited for the first time at the Mid-Atlantic Conference. At left are A. F. Nolan, vice president, and C. R. Edwards, sales manager, of the Nolan firm.

Use of Fairchild Engravings

Clifford A. Thomas, feature and promotion editor, Williamsport (Pa.) *Sun-Gazette*, credited the use of the Fairchild Scan-a-Sizer with enabling his paper to exploit photographic journalism, increasing use of engravings in display advertising, and speeding up lockup times. Among the things his paper has done with this equipment is engraving full pages from color paintings and photos for its annual

Christmas Greeting edition; reducing 8 in. by 10 in. portrait photos to one-half column size for inserts in columns; and using plastic cutouts for both news and advertising columns.

Reports on Packless Mat Study

Most important new development in stereotyping at the moment, said Thomas B. Campion, assistant mechanical superintendent, New York *Times*, is the packless mat. That is why the *Times* recently undertook a full scale investigation of the packless mat with the assistance of ANPA Research Institute's Frank Stanczak.

Results of the *Times* study: The packless mat gives uniformly better depth retention than the hand-packed mat in highlights, middletones shadow dot areas and type-bowl areas.

Tested were: (1) a 0.065 in. Wood Master Flong; (2) a 0.065 in. Burgess Mat; (3) a 0.020 in. Burgess Mat plus Mat-Pak; and (4) a 0.032 in. Burgess Mat plus Mat-Pak. Five representative forms were chosen from a previous edition for the tests. The fifth form was used to determine the optimum mat roller setting for maximum space depth retention and printing quality with each type of mat and molding combination.

Moulding Combinations

Combinations used were: For (1)—0.040 in. lead sheet, 0.0125 in. and 0.090 in. Bakelite Boards (Imp. 55); for (2)—two sheets Kraft, 0.030 in. steel, 0.125 in. and 0.090 in. Bakelite Boards (Imp. 44); for (3)—0.070 in. cloth back creeper, 0.030 in. steel, 0.125 in. and 0.090 in. Bakelite Boards (Imp. 77); and for (4)—same combinations as for (3), except (Imp 92).

Three plates were cast from each mat, two for the press and one was used for measurement. All conditions, equipment and order was the same or equal for the four categories as nearly as possible. In each page selected, several spots from each kind of tone and for type-bowl figures were measured with an ANPA depth microscope.

The important results to remember, said Campion, are that with the one-piece mats, increase of depth in the original does not materially affect the final depth retained in the mat, and that greater original depth does produce greater retained depth with both Mat-Pak combinations. Even more important, he added, the one-piece mats retain significantly less overall depth.

The ideal solution would seem to be a mat which combined in one-piece the characteristics so far produced by Mat-Pak plus a standard or a thin mat, concluded Campion. "Consistent open area space depth of about 0.030 in. appears to us to be the goal and we are doing everything in our power to interest the mat people to work toward this figure."

TOP: The man with the rocket and other props is Warren H. Detwiler, mechanical superintendent, Lancaster (Pa.) Newspapers, Inc., who spoke at Mid-Atlantic Conference. BOTTOM: Mid-Atlantic Conference speakers, Carl M. Noble, president, Electric Eye Equipment Co., and James M. Godbold, director of photography, Minneapolis (Minn.) *Star & Tribune*, chat between sessions.

Fields to Conquer

There is an urgent need for testing news inks to determine mileage, smudging, fly, offset, and strike-through for economy and quality in today's newspaper production, Daniel L. Goffredo of the ANPA Research Institute told the Mid-Atlantic Mechanical Conference. The "Research Institute, by itself, cannot solve these problems," he said. "We need the cooperative effort of newspaper production experience and ink manufacturers, along with our studies on newsprint and press variables."

Herbert R. Behr, manager, Materials Handling Div., Miehle-Goss-Dexter Inc., described the automation processes which can be used to hold down costs in mailing room operation. The development of the system of automatic bundle counting and dispatching from mailroom to truck loading received special attention (see *Printing Equipment Engineer*, February 1958, page 53).

Twine-Bundling Machine

Also during the mailroom session of the Mid-Atlantic Conference, R. L. Drew, product manager, United Shoe Machinery Corp., described the Tymaster twine-bundling machine. Advantages of using this tying machine with Sisal twines were said to be low cost, ease of removal from bundle and easy disposal, plus the ready availability of Sisal twines in the size and strength desired.

The present model machines now under service trials are claimed to be capable of operating at a speed of 27 cycles per minute and are capable of tying newspaper bundles at a rate of 18 to 20 per minute.

The machine will handle bundles varying from 4 in. up to 22 in. thick and up to 36 in. wide. Newspaper bundles of 50 papers, of 80 pages weighing up to 65 lbs. have been tied and handled successfully in transit using a single tie of 1 ply 300 ft Sisal twine. If two ties are necessary or desirable, the bundle may be turned in the machine and cross ties made.

TTS and Weeklies

Allyn S. Brown, president, Brown-Thompson Newspapers Inc., Cambridge Springs, Pa., gave a first hand account of how a Teletypesetter system works on a weekly newspaper operation.

With five newspapers as much as 33 miles apart, printed in two separate plants 15 miles apart, and "floating" personnel problems, Brown's new management faced a sink or swim situation soon after

(*Continued on Page 79*)

For More Information Circle 120 on Reader Service Card

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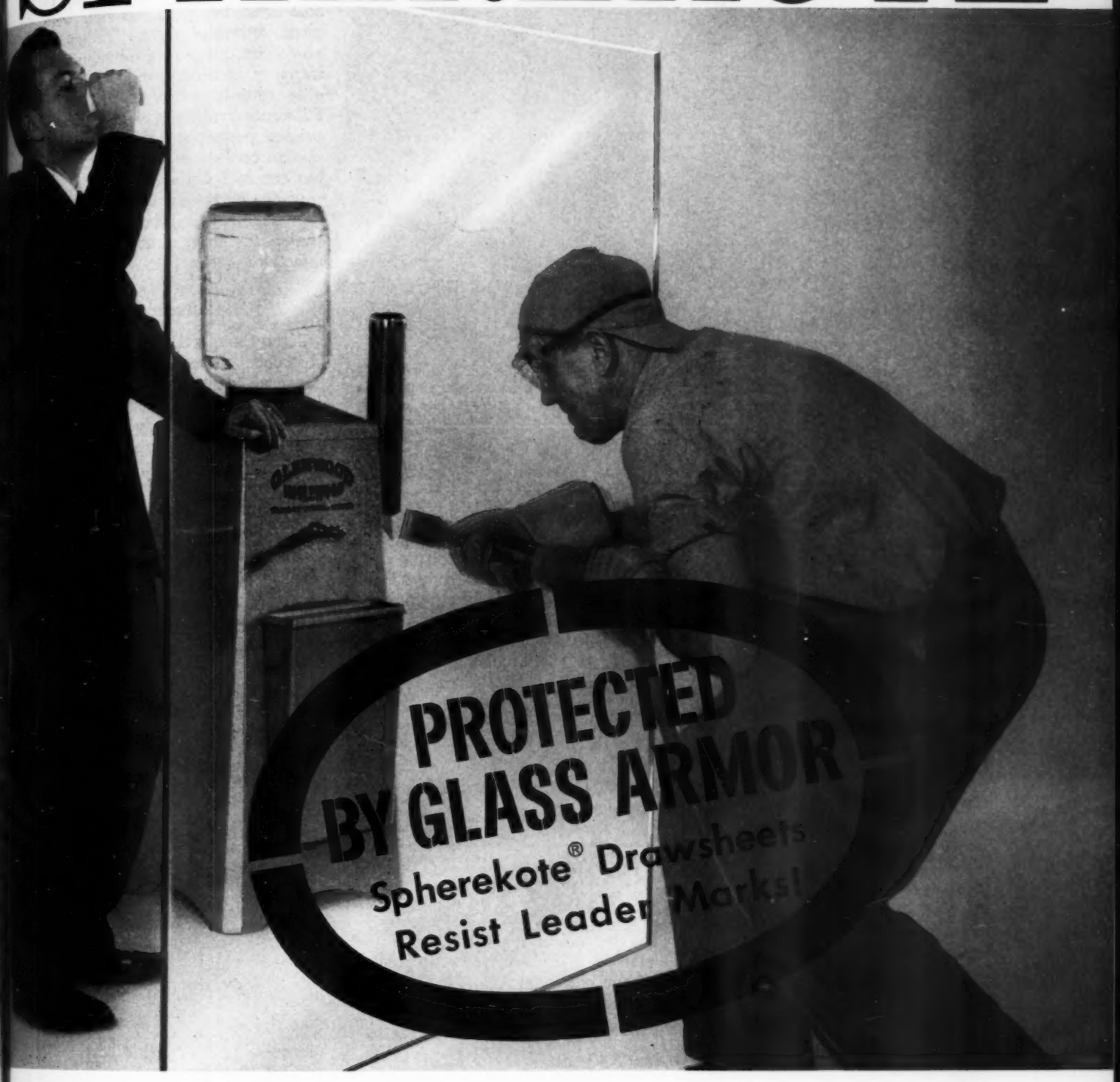

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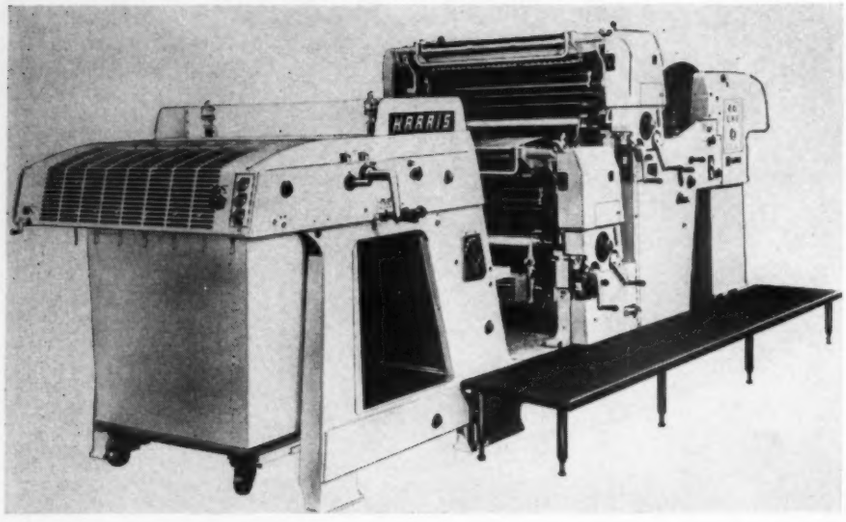


Shown is the Harris Model 238 two color, 25 in. by 38 in. offset press. Feature of the press is a new registering system that incorporates an under-register feed roll feeder and pull-type side guides.

Designs New Sheet Registering System

A new sheet registering system has been incorporated in the design of a two-color offset press by Harris-Seybold Co., Div. of Harris-Intertype Corp. The company describes the system as consisting of an under-register feed roll feeder and pull-type side guides for accomplishing quality printing at high speeds.

The registering system is installed on a 25 in. by 38 in. press which has been designated Harris Model 238.

Spring-loaded upper feed rolls are used on the press to hold the sheet in register at the front guides. The lower feed rolls, which are driven, are used to accelerate the sheet to an over-fed position against the gauge pins. Front register is then maintained by positive sheet contact at the gauge pins, reports Harris.

Other features include a motorized pile elevating and lowering system, and micrometer circumferential and lateral plate cylinder adjustments for both color units. According to Harris, plate clamps, side guides and accessibility of units are all designed for fast press changeovers.

Vacuum slow down wheels and air blow-down bars have been designed into the delivery unit for better sheet control. Printing unit and major feeder adjustments are located in one position on the operator's side of press.

The Model 238 will print sheets 11 in. by 17 in. to 25¾ in. by 38½ in., at rated speeds of up to 7000 i.p.h. Other specifications are: stream feed with a maximum pile height of 48 in.; Harris large-press inker; four form rollers, and V-belt drive to control speed of pan roller on dampening system. Net weight of press is approx. 10 T.; floor space is 8 ft., 9½ in. wide by 17 ft., 1 in. long. Circle No. 282 on Reader Service Card.

LTF Color Survey

(Continued from Page 47)

pensive inks. The greater hue shift of the cheaper inks would be compensated for by slight undertrapping.

Conclusion

The majority of lithographic color printing is being done with process inks and conditions that are not favorable to efficient reproduction. The basic requirements of ideal color reproduction are not understood and are not being met by the industry. However, the importance of this survey does not lie in these negative findings. Its real value to the industry is that these conditions are becoming better understood and may now be measured and controlled in individual plants.

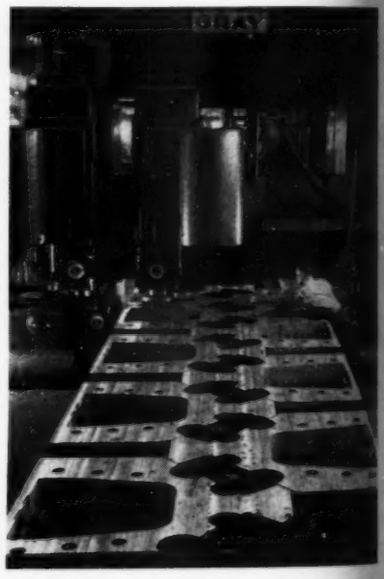
Our present research is aimed at finding the most practical way to deal with the problems that were revealed by the survey. Studies are now being made of the hue, purity, trapping, additivity, and proportionality of inks when printed under different conditions with different presses, papers, etc. We want information on how we can achieve better control of these factors. Once we have it, the extent of correction now required can be reduced and the work simplified and made more effective.

Recommendations

Even though these studies are not complete, there are several things that we can recommend on the basis of the results from the survey. The aim is to satisfy as many of the basic requirements for subtractive process color reproduction listed at the start of this article as possible.

For the most faithful reproductions, it is necessary to use the whitest of coated papers. Also, in photographic work, the use of the broad band 25, 58, and 47 filters for reflection copy gives better results with masking.

There is no completely satisfactory way of color correcting for the most commonly used process inks except with extra masking and hand



Hoe Installs New Milling Machine—One of the largest planer type milling machines in the East was recently installed in the Dunellen, N. J. plant of R. Hoe & Co., Inc. The 150 T. machine is used to turn out bedplates, sideframes and columns for heavy newspaper presses. One man can operate any or all of the four independent milling heads to produce tolerances up to 0.005 in. from a movable pendant station.

work. We therefore suggest the use of "Balanced Inks" which are a product of this survey and study, and which are now available from a number of ink makers.

Lithographers could take one simple step that could greatly improve the uniform quality of their work. This is merely the use of two and three color overlaps instead of separate color control bars in printing. Slight changes in ink strength that can't be seen in separate color patches show up quickly as color changes when the inks are overlapped. Slight shifts from neutral (gray becoming brown, for example) are the easiest to see. In 50% of the tints of the three colors overprinting one another is provided a very sensitive control area for pressroom inspection.

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Finally, if you are not getting full trapping on multicolor presses or if you still require extensive hand work for good color reproduction, don't consider the situation as being impossible to change. One of the greatest values of the survey was finding that while some plants were failing others were achieving what could be termed good performance.

If you want to improve your process color work and be able to do better work consistently, the conditions in your own plant should be studied thoroughly. However, much of the information you should have to do this is relatively new and has not as yet been compiled in a single comprehensive book.

At this time, the most satisfactory way of getting this information to work in your plant is attendance at one of LTF's Color Seminars. These are two day workshop meetings limited to 10 men and held at the LTF laboratory. A number of these seminars are planned for 1958. Those interested should write to LTF for further information.

THE DAILY TIMES
DAVENPORT, IOWA

The Enid Daily Eagle
ENID, OKLA.

Pittsburgh Post-Gazette
PITTSBURGH, PA.

ROCHESTER POST-BULLETIN
ROCHESTER, MINN.

THE CORNING LEADER
CORNING, N. Y.

THE DAILY NEWS-TRIBUNE
LA SALLE, ILL.

The Greenville News
GREENVILLE, S. C.

WATERBURY AMERICAN
WATERBURY, CONN.

AURORA BEACON-NEWS
AURORA, ILL.

Vicksburg Evening Post.
VICKSBURG, MISS.

The Boulder Daily Camera
BOULDER, COLO.

FREMONT TRIBUNE
FREMONT, NEB.

THE PLAIN SPEAKER
HAZELTON, PA.

St. Paul Dispatch
St. Paul Pioneer Press
ST. PAUL, MINN.

The Vancouver Sun
VANCOUVER, B. C.

SPRINGFIELD LEADER AND PRESS
SPRINGFIELD, MO.

The Daily Olympian
OLYMPIA, WASH.

The Detroit Free Press
DETROIT, MICH.

THE KOKOMO TRIBUNE
KOKOMO, IND.

THE WENATCHEE DAILY WORLD
WENATCHEE, WASH.

The La Crosse Tribune
LA CROSSE, WIS.

EVENING HERALD
ROCK HILL, S. C.

THE WALL STREET JOURNAL
CHICAGO, ILL. AND WASHINGTON, D. C.

Los Angeles Times
LOS ANGELES, CALIF.

THE NEW MEXICAN
SANTA FE, NEW MEXICO

THE DAILY HERALD
BILOXI AND GULFPORT, MISS.

THE CHRONICLE-TELEGRAM
ELYRIA, OHIO

MR. FERD MIER
Stereotype Superintendent of the Detroit Free Press says:

"We have had a Carlson Shell Plate Finisher in our department eight months. With three routers in operation our flat work used to pile up for four and five hours. Since placing just one Carlson Finisher our flat work is coming out three to four hours ahead. I am confident we paid for the Finisher in the first sixty days just on time saved."

A company is known by the company it keeps

Chesley F. Carlson Co.
Ben Franklin Building • Minneapolis, Minnesota

For More Information Circle 33 on Reader Service Card

Equipment and Supplies

(Continued from Page 28)

Four Color Offset Press

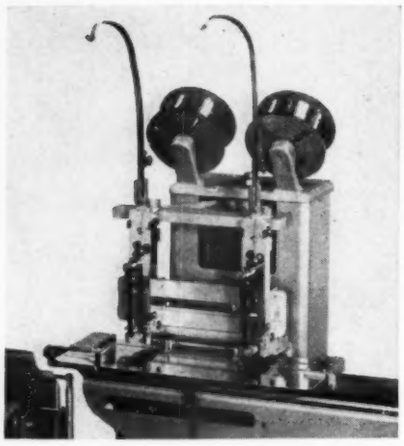
The Green Hornet Quadcolor, a four-color 11 in. by 17 in. web offset job press, is available from American Type Founders Co., Inc.

Basically the press consists of two standard Green Hornet presses joined in tandem. Both the Green Hornet, and its sister press, the Quadcolor, can handle web widths from 8 in. to 17½ in. and deliver sheets with 11½ in. cut-off. Press will print four colors on one side. By use of turning-bars it can also print three colors front and one color back, or two colors each side. It can print and slit at the same time so that 8½ in. by 11 in. work may be run two-up and delivered slit. Work may also be perforated lengthwise while being printed.

Any uncoated web stock suitable for offset, from lightweight bond up to 80 lb. offset may be run. Feeder accommodates paper rolls up to 40 in. diam., with standard 3 in. cores. Circle No. 262 on Reader Service Card.

Robertson Platemaking Line

Robertson Photo-Mechanix recently announced its new Plate-Mate line of plate room equipment. Included in the line is a floor type printing frame which features a floating action hinge mechanism claimed to increase blanket wear and assure even pressure on all areas of the plate. A vacuum safety device is used to prevent tilting the frame before contact of plate and negative is accomplished. Redesigned line of sinks includes utility, developing, temperature controlled and darkroom types. Tilting and non-tilting stripping tables are also available. Also announced are an ink-up and utility table, and a series of stainless steel dot etch tables equipped with water supply systems. Circle No. 279 on Reader Service Card.



Flat Stitch Attachment—F. P. Rosback Co. announces its flat stitch attachment for its Auto-Stitcher machines, said to provide flexibility of side stitching. Device is used to drive one to three stitches at one time with assurance of uniform stitch spacing. Operator can feed continuously without starting and stopping. Attachment can be installed without drilling holes. Circle No. 285 on Reader Service Card.

Imported Display Faces

Fontanesi and Augustea, two decorative display faces designed by Societa Nebiolo of Turin, Italy, are available fom Amsterdam Continental Types and Graphic Equipment, Inc. Augustea, a capital letter face offered in regular and open styles, is designed in a balance of thick and thin strokes, accentuated in the openface style with finely proportioned shadows. It is available in the regular style in 13 sizes, from 6 pt. through 48 pt., and in six sizes of open face, from 16 pt. through 48 pt. Fontanesi, also a capital letter face, is an ornamental, baroque floral letter, combining a dark, heavy center stroke with light outline decorations. It is offered in sizes from 10 pt. to 60 pt. Circle No. 261 on Reader Service Card.

AUGUSTEA
AUGUSTEA IN
FONTANESI

Offset Roller Solvent

A solvent which can be used to remove glaze from offset rollers has been announced by Harry H. Rogers Co., Inc. Solvent can be run through the press so there is no need to remove rollers for scouring or scrubbing, reports Rogers. Called Rogersol Glase-Go, it is said to eliminate the need for using harsh abrasives which are harmful to rollers. Circle No. 275 on Reader Service Card.

Sure-Lok Plastic Binding

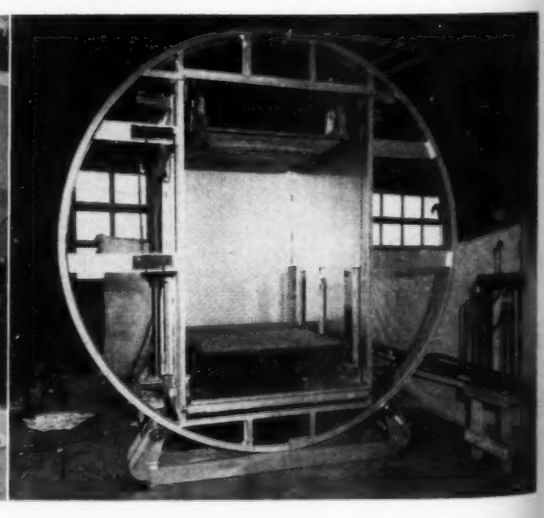
Sure-Lok, a plastic binding that can be locked and unlocked quickly, has been introduced by General Binding Corp. Lock style of binding makes it possible to produce plastic binding in large diameters as the lock prevents the binding from pulling open, reports GBC. Binding is available in 1¼ in., 1½ in. and 2 in. diam. Backbone of binding can be imprinted. Circle No. 278 on Reader Service Card.

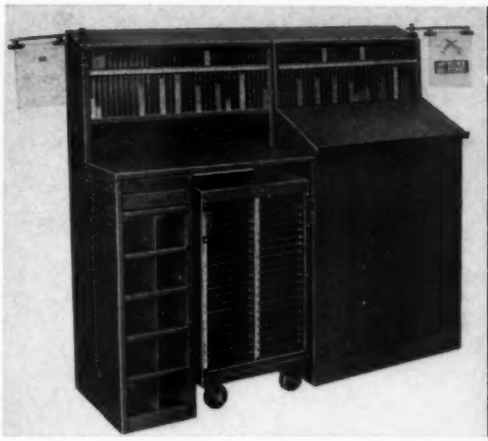
Paper Inverting Machine

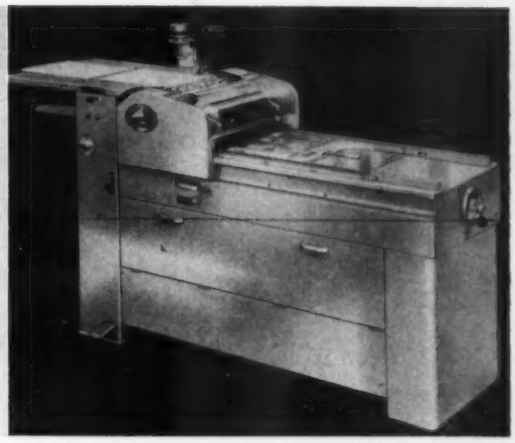
Lifts of paper which have been printed on one side can be inverted for printing on the second side by use of a machine developed by J. C. Busch Co. A lift of paper, mounted on a pallet or skid, is placed in the machine by means of a platform truck or fork lift truck. It is said entire skid can be inverted in about 30 sec., and is then removed on an auxiliary pallet placed on top of original load. Top platen (see illustration) is movable up and down to take care of different heights of lifts and to hold paper in place while it is being inverted. According to Busch, lifts weighing up to 6000 lbs. or more can be handled. Circle No. 274 on Reader Service Card.

Robertson Photo-Mechanix, Inc.'s new line of plate room equipment is at left. Included in the line are a floor type printing frame, redesigned sinks, tilting and non-tilting stripping tables, an ink-up and utility table, and dot etch tables.

At right is J. C. Busch Co.'s paper inverting machine which will handle lifts of paper weighing up to 6000 lbs. or more. Lifts which have been printed on one side can be inverted in about 30 sec. for printing on the second side.







Pictured at right is Vandercook's Universal I test press which will print up to 15 in. by 22 in. Press is available in hand operated or power driven models and is equipped with an automatic washup system. At left is Foster Manufacturing Co.'s new makeup cabinet. Features include flat and sloping work tops for correcting or making-up forms.

Makeup Cabinet

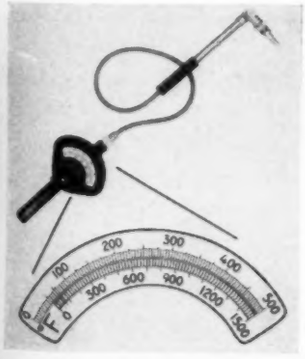
A 7 ft. makeup cabinet designed to provide ample working and storage space has been announced by Foster Manufacturing Co.

Cabinet is made in two sections, one with a flat working top and the other with a sloping top. Directly below the flat top is a drawer which opens front and back and has a divider in the middle. Eight storage bins, each 5½ in. by 5¾ in. are open clear through and space is provided for galley transfer trucks. A type cabinet accommodating 24 full size type cases is provided at the back.

Extension front permits access to all compartments and provides support when case is extended. Two overhead material storage units hold 7 in. of slugs and 3 in. of leads in measures from 6 to 45 picas. A copyholder attached to each material storage unit keeps copy at eye level and swings out of way when not in use. Cabinet is 84 in. by 24 in. by 63 in. Height to slope working top is 43 in. and height to flat working top is 40 in. Circle No. 267 on Reader Service Card.

Double Range Pyrometer

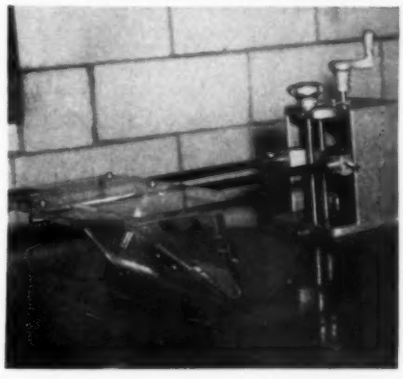
Pyrometer Instrument Co., Inc. has introduced its Model DR35 surface pyrometer designed for plant and laboratory surface and sub-surface temperature measurements alike. The 4¾ in. indicator is equipped with two scale ranges in different colors. Low range from zero to 500



deg. F. is drawn in black and is sub-divided into 5 deg. divisions. High range scale is calibrated in red from zero to 1500 deg. F. Meter automatically corrects itself for changes in room temperature and is said to assure an accuracy of 1½%. It is constructed in a dust, moisture and shock resistant steel housing. Circle No. 277 on Reader Service Card.

Engineering Change for Saw Guard

Brett-Guard Company has announced that the face plate of its circular saw safety guard is now made with safety glass to assure added protection. Guard is used to trap flying chips and enables



the operator to get close to his work. It holds small work within ⅜ in. from the blade to either side. Tapered design is said to give protection from danger of finger cuts. Shield does not touch printing surface. Circle No. 272 on Reader Service Card.

Proportional Register System

An electronic system that automatically controls color, cutoff and fabricating register on high speed presses and for printing on both sides of the web was announced recently by Champlain Company, Inc. Named the Proportional Registron, Model C300, system consists of four integrated components: Master control, web scanner, phase micrometer and automatic correction computer. It is claimed system can be set so any mis-register, down to 0.0005 in., produces proportional correction. Exact web registration is guaranteed from unit to unit on all printing, cutting and blanking inline systems. Any solid color area can be used as the register mark. Register scanning zone is pre-set for any cylinder size, and pre-set adjustment is said to give full control over all types and weights of web materials. Circle No. 269 on Reader Service Card.

Vandercook Test Press

A test press which will accommodate galleys up to 22 in. long and forms or plates up to 15 in. wide has been developed by Vandercook & Sons, Inc.

Known as the Universal I, press is available either as a hand operated model or power driven. It can be obtained with or without an adjustable bed with a range of 0.240 in. By turning hand wheel, bed is raised or lowered to prove plates of different thicknesses, to accommodate different type heights and to obtain impressions without the use of underlays.

Inking system includes 3 in. form rollers which can be changed quickly and adjusted to proper height by turning knobs. System is offered with or without automatic ink feed.

Hinged plastic shield is provided to keep dust from settling on inking system and to guard ink distributor rollers. An automatic washup system is standard equipment. Press is also furnished with an automatic short travel cylinder trip that is used when printing forms up to 14 in. long. Circle No. 266 on Reader Service Card.

Lithomatic Offset Press—A 14 in. by 20 in. offset press, known as the Lithomatic No. 20, has been introduced by Banthin Engineering Co. Press handles 8½ in. by 11 in. sheets, two-up, with ample margins for bleed and grippers. It delivers up to 5000 sheets per hr. Circle No. 268 on Reader Service Card.

Lawson Moves Headquarters

All sales and administrative operations of the Lawson Company, Div. Miehle-Goss-Dexter, Inc., formerly handled at 426 W. 33rd St., New York, N. Y., have been moved to the company's new general headquarters at Pearl River, N. Y.

The New York sales office, including all metropolitan New York salesmen, is now located at 219 E. 44th St. Phone number is MUrray Hill 7-8710. Miehle Company and Dexter Company, also divisions of M-G-D, are located at the same address.

Lawson's engineering, service and parts departments, along with a display floor, remain at the 33rd St. address.

Printing Week Chairman

Gerald L. Flood, co-owner, Seward & Flood commercial printers, Santa Monica, Calif., has been named Intl. Printing Week Chairman by Ferd Voiland, president, Intl. Craftsmen's Assoc. Flood is one of the founders of the Santa Monica Bay Craftsmen's Club and has served in most of its official positions including that of president. He is a charter member of the Indianapolis (Ind.) Craftsmen's Club and has served on its board of governors. Currently he is also serving as the 12th District representative for the International.

FLOOD

Chicago Exhibit Features 19th Century Printing

An exhibition of American advertising pieces, most of them produced and printed prior to 1900, is now open to the public at the Lakeside Press Galleries of R. R. Donnelly & Sons Co., 350 E. 22nd St., Chicago.

The show, entitled *Business Americana*, will be on view through July from 9 a.m. to 4 p.m. daily except Saturdays, Sundays, and holidays.

On display are nearly 100 samples of the advertising appeals of the day. Posters predominate, making bold use of color and bold claims for the products they promote. Examples are shown, too, of catalogs, calendars, hangers, product containers, premiums, stereoptican slides, trading cards, and booklets.

USPI System For Matching and Mixing ROP Colors

More efficient and economical ROP color printing are among benefits possible through a controlled ink mixing and matching system, said Irwin Brooks, executive vice president, United States Printing Ink Corp., at the Mid-Atlantic Newspaper Mechanical Conference held in Pittsburgh on March 13-15.

Called the SpectROPlan system, it was devised by USPI in cooperation with the ANPA Mechanical Dept., and is based on ANPA-AAAA recommended standard colors.

Using the SpectROPlan system, newspapers can: (1) Have advertisers and agencies accurately determine color requirements desired. (2) Match ROP colors immediately in engraving department with help of proofing inks, available for each color given in book. (3) Mix no more of a specific color than is needed to handle a given ROP color ad. (4) Eliminate having engraver mix inks to customer's specifications.

Keystone in the SpectROPlan system is the sample book which displays and designates 132 colors printed on 32 pound newsprint stock to simulate as closely as possible the appearance of a production newspaper page. Twenty-two hues are arranged in separate rows and six values of each hue are separated into columns.

In addition, 396 colors are displayed in three screen tints which appear at the top of each color print. Formulations are given for adding varying amounts of a transparent extender to all of the SpectROPlan colors in order to produce inks which match the appearance of the screens.

Where a color swatch must be matched, the swatch need only be moved about on the face of the display until the matching color is located. Intermixing between two adjacent colors results in an almost unlimited range of colors. SpectROPlan inks and ANPA-AAAA standard ROP inks can be used interchangeably in the formulations.

Aluminum Foil Ads Appear in Two Papers

A package appeared as a newspaper page recently when the McKeesport (Pa.) *Daily News* included an aluminum foil bread wrapper in one of its editions. The wrapper advertised the fact that McKeesport's Vienna Baking Co. was offering a loaf of bread in a package of Alcoa Wrap aluminum foil. The wrapper was printed in three colors and run in 40,000 copies of the paper.

Watching the press run of the edition of the McKeesport (Pa.) *Daily News* which carried an ad printed on aluminum foil are, left to right, J. K. Runnette, Alcoa, and Jack Hardman, Milprint, Incorporated.

The Milwaukee (Wis.) *Sentinel* also printed an aluminum foil ad recently. Sponsored jointly by Reynolds Metal Co. and the Robert A. Johnston Co., the full page ad introduced the new Johnston saltine package, which features a Reynolds foil overwrap.

The foil side of the ad was preprinted in seven colors at Reynolds' St. Louis gravure plant and shipped to Milwaukee, where the paper side was printed as part of the *Sentinel*'s regular press run.

Michigan Craftsmen's Meeting

The Grand Rapids Craftsmen's Club will be host to the Fifth District Craftsmen's Conference at Hotel Pantlind, Grand Rapids, Mich., May 23-24. An educational program will include talks by Dr. Marvin C. Rogers, Graphic Arts consultant, Chicago, and W. J. Sedlak, Miller Printing Machinery Co. Another feature will be a panel discussion moderated by Robert Edgar, International governor, and president, Neyhart Printing Co., Pittsburgh.

PRINTING INDUSTRY PATENTS

Covering patents issued February 4, 11, 18 and 25.

All new patents for the Graphic Arts are reported exclusively for *Printing Equipment Engineer* by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc. presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issued each week. *Printing Equipment Engineer* is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Printing Presses:

OIL AND SPIRIT-SOLUBLE DERIVATIVES OF PHTHALOCYANINES

These pigments have greatly increased solubility. This permits greater color value and faster dispersion. Only a simple mixing is required to prepare heat-set and moisture-set printing inks. Patent 2,823,205 by Harold T. Lacey and George R. Waitkins, assigned to American Cyanamid Co.

INKING MECHANISM FOR PLATEN PRESS

This mechanism automatically interrupts feed of ink to the printing form each time printing is stopped, even though the press continues to idle. When printing is resumed the printing form is correctly inked and no paper is wasted. It is simple and virtually infallible. Patent 2,821,917 by Artur Buttner and Hermann Kocher, assigned to Schnellpressenfabrik Aktiengesellschaft Heidelberg.

INKING MECHANISMS

For color ink feeds using a distributing cylinder supplied through an ink rail by means of individual pumps, this patent offers several improvements. Cleaning is easier, pages of different widths may be serviced, and colors may be changed rapidly. Patent 2,821,919 by Arthur Dressel, assigned to R. Hoe & Co., Inc.

PLATE CLAMP MECHANISM

A spring is used for clamping the otherwise free end of the flexible printing plate and for exerting desired wrapping tension on this plate. The maximum stress of a short spring is used, which permits smaller or varied sizes of plate cylinders to be used. Patent 2,822,754 by William F. Huck.

PORTABLE COLOR INK FOUNTAIN

The fountain is adjustable to regulate ink flow to the inking rollers at slow press speeds and maintains the same precisely regulated flow at high speeds. No read-

Cut your page handling and storage costs *in half* with modern Hamilton Electric Page Storage Cabinets. Hamilton cabinets do the job of 20 form trucks—yet cost less than half as much, take only one-fifth the floor space. Cabinet's elevator shelf operates on standard 110 volt alternating current—lets one man handle full-size newspaper letter boards easily, quickly, safely, *with no manual lifting.*

See how Hamilton's Electric Page Storage Cabinets actually pay for themselves in faster, safer, *better* handling of materials. Get the full facts next time your Hamilton dealer calls on you!

Free **new Hamilton Catalog**

Find out how you can turn wasted walking time into profitable working time with Hamilton's modern, cost cutting Printers Equipment. Write for FREE copy of new Catalog No. 28!

PRINTERS EQUIPMENT

designed and crafted by

Hamilton

HAMILTON MANUFACTURING COMPANY • TWO RIVERS, WISCONSIN

For More Information Circle 78 on Reader Service Card

Managers Tour Plant—Branch managers of Chemco Photoproducts Co. recently toured the Brooklyn (N. Y.) plant of Rolled Plate Metal Co. for orientation on that company's products for one bite, powderless etching of zinc. Pictured from left to right are: C. Harold Larsson, Eastern manager; H. K. Marshall, New Orleans, La.; Naomi D. Marshall, Southern manager, all of Chemco; and Jack Reese and Mike Brande, both of Rolled Plate Metal Co.

justment of the ink flow is required after stoppage of the press during runs. The fountain transfer roller is prevented from carrying up any ink along its end walls to the press inking roller. Patent 2,823,607 by Ernest E. Butcher and Louis Spilman, assigned to Waynesboro Publishing Corp.

LOCK-UP BAR ASSEMBLY

In this lock-up assembly a plate is used to engage one of the side rails of a printing press bed. A shoe associated with the plate is arranged to engage the other side rail and a bar associated with the plate is arranged to engage a printing form in the bed. An eccentric cam is journaled by the plate and is adapted to urge the shoe and plate into engagement with the side rails and the bar into pressure engagement with the printing form. Patent 2,823,608 by David D. Vandercook and Garret D. Robar, assigned to Vandercook & Sons, Inc.

WEB SEVERING DEVICE FOR PRINTING PRESSES

In case of paper break, this device cuts off the web instantly to prevent it from wrapping up on the press cylinders. Patent 2,821,914 by Leo C. Schuba, assigned to Tribune Company.

OFFSET PRESS

This press embodies many novel features, such as mechanism for gauging and aligning sheets for engagement by grippers on an impression cylinder, means for operating the ratchet wheels on the shafts of water fountain rollers and ink fountain rollers, and means for delivering sheets from the impression cylinder with the optimum condition of light contact with the printed surface. Patent 2,821,911 by Luis Mestre, assigned to Lewfor Development Corp.

MEANS FOR INTERMITTENTLY PERFORATING AND SKIPPING A PREDETERMINED NUMBER OF SHEETS

An attachment for a printing press automatically and selectively perforates, slits or scores certain of the sheets fed through the press, preferably the first two sheets, and leaves the third sheet without such perforation. The attachment is suitable for preparing receipt or ticket sheet groupings. Patent 2,821,915 by Nathan Katz.

ROTARY PRINTING PRESS

This rotary printing press is designed for use in small shops, banks, and other businesses. Its compact mechanism, electrically driven, includes a sheet feeder, rotary printing couple, inker, a novel impression cylinder throw off, and a collection device. Patent 2,821,916 by William B. Miles.

DAMPENING ROLLER FOR OFFSET PRESSES

The dampening ductor comprises a cylindrical arrangement of brush components lying parallel to its rotary axis. Several rows are used and they are spaced in the peripheral direction one from the other. The brush components are removably mounted so that the position and number thereof can correspond to the necessary feed of moisture to a plate. Patent 2,821,-

WARRANTY

by The Manufacturer and American Publishers Supply Inc.

Every A. P. S. "Langitex 9000" Cork Molding Blanket is guaranteed to be absolutely uniform in weight (each blanket 21" x 25" x 1/4" weighs 3 lbs.) uniform in density, and an important factor is that the thickness is held to the minimum of cork tolerances.

American Publishers Supply Inc.

The A. P. S. "Langitex 9000" Cork Molder has been in the development stage for over seven years. We have the first full production in stock now ready to ship. Low in price, the New Cork sells for the following:

1/8	3/16	1/4	5/16	3/8
$5.20	$6.40	$7.85	$8.90	$10.50

QUANTITY DISCOUNTS
5-14 10% 25-99 20%
15-24 15% 100 or more 30%

LOW PRICES PLUS AN UNCONDITIONAL GUARANTEE

MOLDS UNIFORM MATS

EXCLUSIVE AUTHORIZED AGENT

Distributed and Sold Only By

A.P.S. Inc. American Publishers Supply Inc. P. O. Box 421 Lynnfield, Mass.

UNIFORM CORK THICKNESS & WEIGHT

For More Information Circle 8 on Reader Service Card

PATENT SEARCHES
For Patent Research in the U.S. Patent Office, or a prompt estimate on any type of search, write
INVENTION, INC.
Munsey Bldg., Washington, D.C.

912 by Werner Kasermann, assigned to Color Metal A. G.

SPEED CONTROL FOR PRESSES

Automatic action is obtained for small printing presses, when impression is thrown off, to slow the press rather than to stop it. This is accomplished by automatically or manually tensioning a belt driven by an adjustable diameter pully mounted on a motor shaft so as to cause changes in the effective diameter of the pulley and therefore changes in the speed of the belt. Patent 2,824,457 by Robert K. Norton, assigned to Harris-Intertype Corporation.

Platemaking:

PHOTOMAGNETIC COMPOSITION AND PRINTING PROCESS

A number of copies can be made from these photographic resist materials without degradation of the printing surfaces. The resist composition is an ester of polyvinyl alcohol serving as carrier and light sensitive material, and gamma ferric oxide. Patent 2,823,999 by Franklin A. Hamm, assigned to Eastman Kodak Co.

SCALE ACTUATOR FOR VACUUM PRINTING FRAME

This device is used with the photocomposing machine described in U. S. patent No. 2,713,294. It accurately positions scale members and negative holders in relation to each other and to a sensitized plate. It is combined with the magnetic base for the make-up mat of a vacuum printing frame. Patent 2,822,736 by George L. Simon.

POLYMERS FOR METAL PRINTING PLATES

Resist images on metal printing plate supports can be made from these light-sensitive, unsaturated polymeric maleic and acrylic derivatives. These maleic anhydride polymers are prepared by condensation with w-hydroxy-alkoxybenzaldehydes or aminobenzaldehydes with certain derivatives of these aldehydes. Patent 2,824,084 by Cornelius C. Unruh and Donald A. Smith, assigned to Eastman Kodak Co.

PLATEMAKING COMPOUNDS

Exposed and developed, these compounds are useful as litho or printing plates. These new polymers, considered to be light-sensitive polymeric dyes, are obtained by the reaction of maleic anhydride copolymers with the hydroxyalkyl derivatives of certain rhodanines. Patent 2,824,087 by John J. Sagura and Cornelius C. Unruh, assigned to Eastman Kodak Co.

PRINTING CONTROL CIRCUITS FOR PHOTOELECTRIC ENGRAVING MACHINES

The engravings produced by this apparatus are useful either as printing plates or as masters from which stereotype plates can be duplicated in a known manner. The printing control makes it easier for an operator to make correction in an engraving process, i.e., those involving the kind of paper to be printed, the ink used, the kind of press, and the like. Patent 2,824,905 by Monroe Farber, assigned to Fairchild Camera and Instrument Corp.

Feeding, Folding, Delivery:

SHEET REGISTERING MECHANISM

This is an improved side registering mechanism which grips a single sheet with no overlap with other sheets. Suction grippers or a roller may be used for pushing a sheet up, leaving a passageway for the succeeding sheet to pass into registering position under the held sheet. Patent 2,823,030 by Headley T. Backhouse and George W. Tebbs; entire interest in Backhouse.

PAPER HOLDER FOR SHEETS ARRANGED IN A PILE

This arrangement keeps sheets from sticking together as they are removed from the bottom of a pile by suction. It is especially designed for very thin sheets. Several pointed needles support the pile of sheets and permit air to get between the sheets to separate them. Patent 2,823,032 by Michel Kister.

FEEDING DEVICE FOR SMALL SHEETS AND CARDS

The conveying track behind the feed rollers is equipped with a bridge that forms a downwardly extending shoulder. Feed

Run 2-up on 14"x17½" sheets and Print both sides at once!

Davidson Dual-Lith model 233 The big sheet size of Davidson Dual-Lith Model 233 – combined with Davidson's patented 2-Cylinder Principle – is putting many a printer way out in front of his competitors. This rugged *production* machine prints BOTH sides of ganged-up jobs *simultaneously* . . . delivers 10,800 impressions per hour at normal operating speeds! On 8½" x 11" jobs printed two-up and on both sides, the runs are off in one-quarter of normal running time. On smaller page sizes, you can gang up as many units as you want within the big 13" x 17" form area – even add a special segment for a full 14" x 17" printing area!

For conventional offset, Model 233 provides clear, sharp reproduction of line and halftone work . . . superior coverage of large-area solids . . . sparkling multi-color reproduction in hairline register. And Davidson's unique 2-Cylinder Principle with removable segments gives you a choice of 8 quality printing methods on ONE machine – lets you select the best process for the job at hand!

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A Subsidiary of Mergenthaler Linotype Company
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☐ Send literature
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See a demonstration . . .
Headings in ProType • Text in Linotype

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members deliver each sheet at a uniform rate, preventing interference. It is most useful for feeding small cards or sheets into printing presses, tear-off machines, etc. Patent 2,823,033 by Nils G. Allanson, assigned to Aktiebolaget Dux.

WORK TRANSFERRING MACHINE

The device may be readily incorporated into an assembly line where magazines and booklets of the same stock, but of varying sizes, may be handled in transferring the work from one operation to another. It does not require the attendance of an operator. Patent 2,823,788 by Lewis J. Chase, assigned to The World Color Printing Co.

SHEET FEEDING APPARATUS

For use in existing sheet feeders having a suction sheet lifting device movable downwardly toward and upwardly away from the top of a pile of sheets and a sheet holding floor clamp which is movable downwardly and upwardly into and out of engagement with the top of the pile of sheets, this apparatus provides novel mechanism operated by the foot clamp and controlled by the pile of sheets for automatically controlling and determining the extent of downward movement of the suction sheet lifting device. Patent 2,823,916 by Joseph R. Wickland, assigned to Miehle-Goss-Dexter, Inc.

SHEET FEEDING MECHANISM

The mechanism is of the type in which a stack of sheets is supported by a table. Instead of using the vertically movable table, this mechanism is provided with a plurality of like tables each supporting a stack of sheets ready to be fed to the press. As one table is emptied, another table is brought into feeding position. Patent 2,824,738 by Artur Buttner, assigned to Schnellpressenfabrik Aktiengesellschaft Heidelberg.

Bindery:

"GLUING-OFF" MACHINES FOR BOOKS USING HEAT-SOFTENABLE CEMENT IN ROD FORM

Stacks of signatures to be bound are passed into engagement with a heated, open top casing from which projects a melting and applying disk and a spreader brush which is so driven as to wipe the cement well into the edge to which a book cover is to be attached. Patent 2,824,541 by Hans C. Paulsen, assigned to United Shoe Machinery Corp.

BOOK FEEDING MECHANISM FOR A BAND SAW

This is an automatic feeder for carrying bound double books through a band saw in proper alignment and spaced so they will be sawed into two parts. It also has a device for holding the books down firmly as they are sawed. Patent 2,822,003 by John O. McCahon and Robert G. Proctor, assigned to R. R. Donnelley & Sons Co.

SHEET TRIMMING DEVICE

The cutting blade is mounted so as to have a straight-line movement along the shearing edge of a board, as distinguished from the more familiar type of device in which the cutting blade is pivoted to one corner and is adapted to be lowered along the cutting edge. Patent 2,823,749 by George H. Chamberlain.

Miscellaneous:

ROTARY DUCTOR MECHANISM

The roller of this invention travels in a generally hypocycloidal path. An improved mounting and dimensioning of parts makes movement more efficient while contact with other members is improved. Patent 2,822,753 by Richard Woessner and Albert T. Zurick, assigned to R. Hoe & Co., Inc.

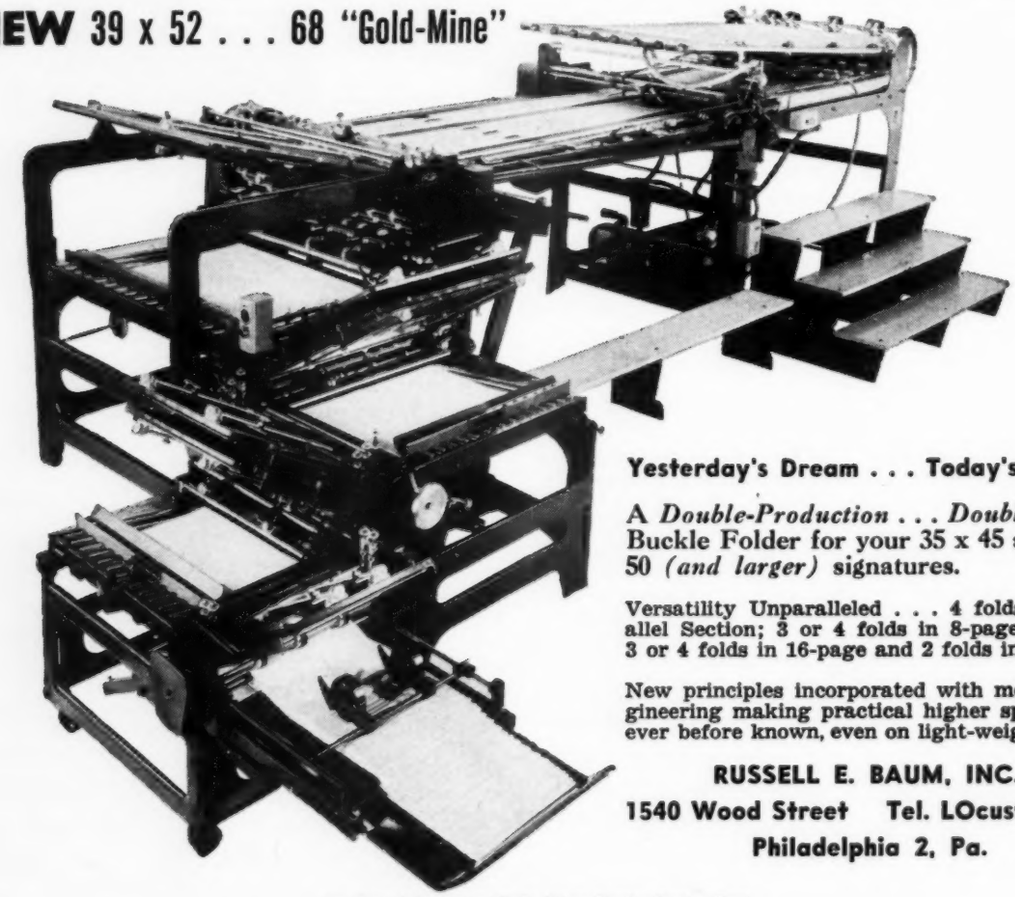
PHOTOGRAPHIC STENCIL FOR DIFFUSION PRINTING

This stencil has a Yoshino paper backing; a diffusion layer coated with wax emulsion, gum arabic, glycerine and bichromate; a similar intermediate layer, and a cover layer of shellac emulsion, wax emulsion, gum arabic, and bichromate. It is easily handled and stable on storage. Patent 2,824,000 by Curt Eckhardt.

SADDLE BEARING

This device is for use in a turntable for paper roll stands such as described in U. S. patent 2,585,859. A central depression in the bearing and a latch for maintaining alignment of the saddle bearing compensate for deflection of an arbor due to weight of a paper roll. Patent 2,823,961 by Frank W. Showalter, assigned to The American Envelope Co.

NEW 39 x 52 . . . 68 "Gold-Mine"



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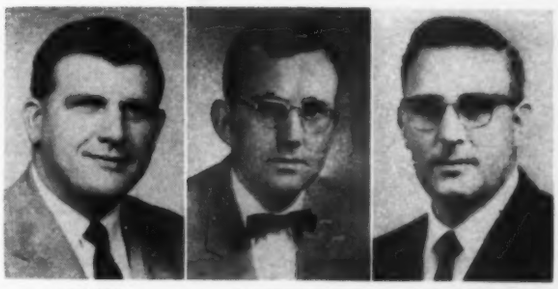
NEWS ITEMS

Cutler-Hammer Expands—A broadening of Cutler-Hammer, Inc.'s marketing organization has been announced by J. M. Cook, vice president in charge of marketing. Cook's marketing staff will comprise: E. B. Fitzgerald, apparatus sales manager; L. P. Niessen, advertising and public relations manager; F. A. Wright, general sales manager; R. C. Monahan, marketing research manager, and H. B. Phillips, quantity sales consultant.

Other appointments include: G. A. Rauch, manager, distributor sales; W. F. Ave'Lallemant, staff assistant; C. W. Ludvigsen, manager, systems control sales division; C. G. Sims, manager, quantity sales division; F. C. McNicol, manager, general purpose control sales division; K. M. Nelson, manager, industrial purpose control sales division; A. R. Johnson, manager, low voltage distribution apparatus sales divison; M. R. Brice, manager, service sales division, and E. E. Peterson, staff consultant.

New England Representative — Dexter Company, Div. Miehle-Goss-Dexter, Inc., has announced appointment of Donald E. Davis as sales representative, serving Massachusetts, New Hampshire, Vermont, Maine and Connecticut.

Linotype Representatives—Chester J. Plewa, production engineer, Mergenthaler Linotype Co., has been assigned to cover the southern California territory. Henry L. Murphy, production engineer with the Boston agency, will represent Linotype in middle and eastern Massachusetts and Rhode Island. Richard Koehler, also a production engineer with the Boston agency, will cover Maine, New Hampshire, Vermont, and two counties in Massachusetts.



PLEWA MURPHY KOEHLER

DAVIS McNEIL

Chemco Branch Manager—Kenneth F. McNeil has been named manager of Chemco Photoproducts Co.'s Mid-Western branch, which comprises a 12 state territory. His headquarters will be in Chicago. Robert J. Darcy succeeds McNeil as New England branch manager.

Chalifoux Retires—I. J. (Ike) Chalifoux, chief machinist, Cleveland *Plain Dealer*, recently announced his retirement. He has been with the *Plain Dealer* for 18 years and now plans to retire in the Keys in Florida. James P. Haga has been named to succeed him.

Dexter Distributors—Axel Carlberg, sales manager, San Agustin S. A., Mexico City, Mexico, was the recent guest of several U. S. binderies and the Dexter Company, Div. Miehle-Goss-Dexter, Inc. His firm has been appointed Dexter distributor in Mexico. Also announced was the appointment of Nessler & Wagner Co., Inc., Cincinnati, O., as parts and service representative for Dexter. Nessler & Wagner will handle southern Ohio, southern Indiana, excluding Indianapolis, and Kentucky.

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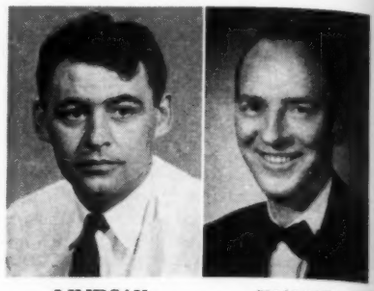
Kansas City Tribute — Graphic Arts Assoc. of Kansas City recently honored its retiring president, W. F. Ashcraft, at a dinner attended by 200 persons. Pictured are: William R. Brown, Charles E. Brown Printing Co., new GAA president; Ashcraft; Hy Vile, a former association president; and Burdette Yeo, executive secretary.

John W. Locke has rejoined Mosstype Corporation as a member of its sales service staff. He has previously been with Mosstype for five years and was supervisor of the company's design roller order department.

Alvin J. Stevens, jr., co-manager, Carter Rice Storrs & Bement's New Haven, Conn. division, died recently at St. Raphael Hospital, New Haven, after a short illness.

Champion Promotes Four—Herbert W. Suter, jr., vice president and sales division manager, Champion Paper and Fibre Co. recently announced four promotions. Don DuVall has been appointed product sales manager of business papers and William Ziegler has been named product sales manager, paperboard and pulp. Kenneth Swing has been promoted to assistant sales manager, special lot and government papers. Ralph Colegrove has been named manager of advertising and sales promotion.

Louisville Production Manager—William R. Lindsay, assistant production manager, Louisville (Ky.) *Times* and *Courier Journal*, has been named production manager. He will supervise operations of all mechanical departments. A graduate of Massachusetts Institute of Technology, Lindsay succeeds M. George Martin, who has been appointed consultant and adviser of production problems for the newspapers. Martin's new duties include studying new production procedures, processes and equipment used by other newspapers and printing companies.



LINDSAY WALKER

Louisville Graphic Arts Mgr.—David M. Walker has been appointed manager of the Louisville (Ky.) Graphic Arts Assoc., Inc. Walker was formerly assistant manager of Graphic Arts Assoc. of Michigan, Inc. He has served as president of the Detroit Craftsmen's Club and was secretary-treasurer of the Fifth District Society of Craftsmen's Clubs from 1953-55.

ATF Office Manager—Charles Gallagher has been appointed office manager of the Philadelphia branch of American Type Founders Co., Inc. Also announced was the appointment of Arnold K. Millett as sales representative covering upper and central New York with headquarters in Rochester, N. Y.

Linotype Promotes Two—Edmund C. Arnold, editor of *Linotype News*, has been promoted to director of trade relations for Mergenthaler Linotype Co., according to J. W. Reid, vice president in charge of sales. Arnold will have charge of advertising and public relations and will continue as Linotype's specialist on newspaper design. He will also continue to conduct sessions in newspaper design. Also announced was the appointment of Briant W. Patterson as manager of the production planning department. He succeeds Collier A. Elliot, who has gone into the consulting field.

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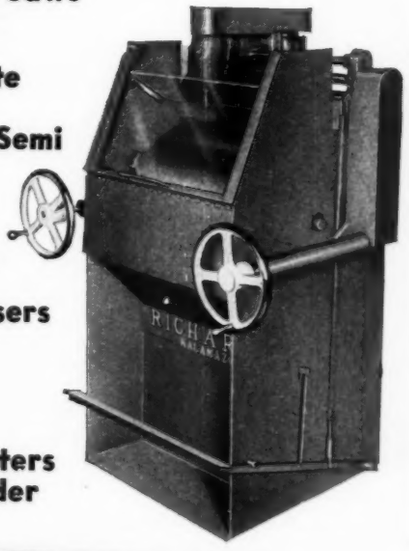

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SOUTH HACKENSACK, N. J.

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George H. Glaeser, a well known figure in the printing industry, passed away recently in Detroit. He was associated with Michigan Electrotype and Stereotype Co. and served as president and secretary of the Detroit Craftsmen's Club.

Cline Electric Mfg. Co. filed a voluntary petition in the Federal Court on Mar. 31 for reorganization under Chapter XI. This action resulted from substantial additional costs on Government contracts, which the company has not yet been able to recover from the U. S. Army, under two 20 mm. gun contracts. The firm has been in business in Chicago for 46 years. It manufactures equipment for the printing industry and a line of spray equipment for industrial finishing.

Announces New Company—A. W. Haydon has started a new enterprise known as the Haydon Instrument Co., to design and manufacture proprietary electro mechanical devices. High speed numerical counters and printed circuit motors are now under development. The company is located at 156 W. Liberty St., Waterbury 20, Conn.

Cory Retires—Joseph J. Cory, chief linecasting machinist, St. Paul (Minn.) *Pioneer Press* and *Dispatch* recently announced his retirement. He has been a machinist since 1900. Cory was a prime mover in formation of the Twin Cities Linecasting Machinists Club, which later was instrumental in forming the Northwest Newspaper Mechanical Conference. He has been president of the latter organization and many times has headed the linecasting machinists clinic of the conference as chairman.

Edward L. Skarren has been appointed executive vice president of Advertising Composition, Inc., New York, N. Y. He will be responsible for the sales development and promotion of the company's package service.

Opens Dallas Office—R. Hoe & Co., Inc. has announced opening of a Southwestern regional office in Dallas, Tex. Charles M. Keeter is manager of the office, located at 310 Meadows Bldg.

Cutler-Hammer Promotions—Appointment of J. M. Cook as vice president in charge of marketing and P. S. Jones as senior vice president have been announced by Philip Ryan, president, Cutler-Hammer, Inc. Jones, formerly vice president in charge of sales, plans to retire at the end of the year after 43 years of service. Cook will assume direction of all sales functions for the firm.

COOK SPROUSE

Southeastern Representative — H. B. Sprouse has been named Southeastern sales representative for Didde-Glaser, Inc. His headquarters will be at 647 Blanch St., N. W., Atlanta, Ga.

Duncan Passes—Frank Duncan, mechanical superintendent, Portsmouth (O.) *Times* died Apr. 5 of a heart attack. He was a regular attendant of the Great Lakes Mechanical Conference.

GPI Vice President—W. J. Egan has been named vice president of General Printing Ink Co., Div. Sun Chemical Corp., according to J. S. Thome, vice president, Sun Chemical.

Linotype Promotes Smith—Mergenthaler Linotype Co. has named Ralph P. Smith, production engineer with the New York (N. Y.) branch, to represent the company in Long Island, Westchester County, Rockland County, Staten Island and upper New York, N. Y., including the Bronx.

Morrill Representative—Richard J. Pestinger has been appointed Midwest sales representative for Geo. H. Morrill Co., Div. Sun Chemical Corp., according to R. W. Dando, general manager.

McCain Passes—Paul McCain, 60, owner, Paul McCain Typographer, Inc., Houston, Tex., passed away recently. A member of the printing industry for over 40 years, he opened his own firm in 1947.

DO THE WORK OF HOURS *in Minutes!*

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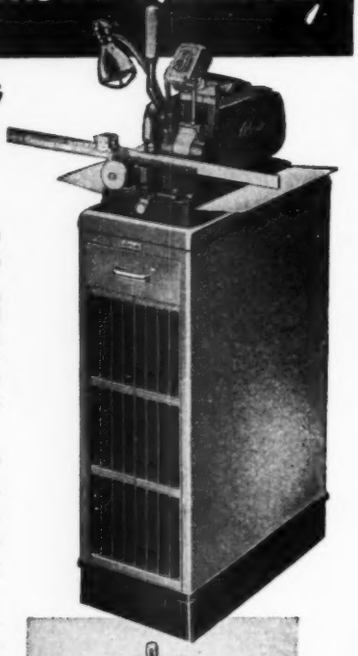
POWER MITERER



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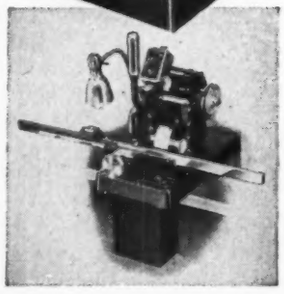

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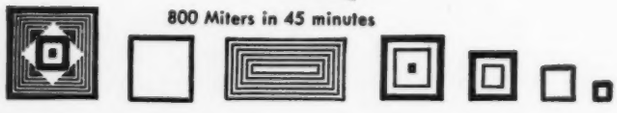

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MEETINGS for the PRINTING INDUSTRY

American Photoengravers Assoc.—1958 Conv., Hilton Plaza Hotel, Cincinnati, O., Oct. 13-15. Exec. Secy. Frank J. Schreiber, 166 W. Van Buren St., Chicago 4.

ANPA Mechanical Conf.—1958 Conf., Chalfonte-Haddon Hall, Atlantic City, N. J., June 23-25. Mgr. Richard E. Lewis, ANPA Mechanical Dept., 370 Lexington Ave., New York 17, N. Y.

Book Manufacturers' Institute—1958 Conv., Greenbrier Hotel, White Sulphur Springs, W. Va., Oct. 8-11. Secy. Miss A. G. Watson, 25 W. 43rd St., New York 36, N. Y.

Educational Graphic Arts Exposition—Coliseum, New York, N. Y., Sept. 6-12, 1959. Gen. Mgr. A. E. Giegengack, 5600 Massachusetts Ave., N.W., Washington 16, D. C.

Fifth District Craftsmen's Conf.—1958 Conf., Pantlind Hotel, Grand Rapids, Mich., May 23-24. Secy.-Treas. George W. Thompson, Toledo Colortype Co., 1711 Jefferson Ave., Toledo, O.

Graphic Arts Trade Assoc. Executives—Managing Director, Printing Industry of Twin Cities, Inc., 2645 University Ave., St. Paul 14, Minn.

Gravure Technical Assoc.—1959 Conv., Drake Hotel, Chicago, Mar. 6-8. Exec. Secy. Edward S. St. John, Room 4800, 30 Rockefeller Plaza, New York 20, N. Y.

Great Lakes Mechanical Conf.—1959 Conf., Hotel Statler, Detroit, Jan. 18-20. Secy.-Treas. Don Clark, Stereotype Supt., Grand Rapids (Mich.) *Press.* L

Illinois Newspaper Mechanical Conf.—1958 Conf., Hotel Orlando, Decatur, Ill., Sept. 13-14. Secy.-Treas. Arthur Kramer, Joliet (Ill.) *Herald-News.*

Intl. Assoc. Electrotypers & Stereotypers—1958 Conf., Hotel Chalfonte-Haddon Hall, Atlantic City, N. J., Sept. 8-11. Exec. Secy. Floyd C. Larson, 701 Leader Bldg., Cleveland 14.

Intl. Assoc. of Printing House Craftsmen—1958 Conv., Statler Hotel, Detroit, Mich., Aug. 10-13. Exec. Secy. Pearl E. Oldt, 411 Oak St., Cincinnati 19, O.

Intl. Graphic Arts Education Assoc.—1958 Conf., Stout State College, Menomonie, Wis., Aug. 3-7. Exec. Secy. Samuel M. Burt, 5728 Connecticut Ave., N.W., Washington 15, D. C.

Intl. Printers Supply Salesmen's Guild—1958 Conv., Statler Hotel, Detroit, Mich., Aug. 10-13. Secy. Francis J. Tominey, *New England Printer & Lithographer,* 470 Atlantic Ave., Boston 10, Mass.

Intl. Typographic Composition Assoc.—1958 Conv., Ambassador Hotel, Los Angeles, Calif., Oct. 14-17. Exec. Secy. W. E. Switzer, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conf.—Secy.-Treas. Paul F. Kamler, Mechanical Supt., Clinton (Ia.) *Herald.*

Kansas-Missouri Newspaper Mechanical Conf.—1958 Conf., Town House Hotel, Kansas City, Kans., Sept. 6-7. Kansas Gen. Mgr., Larry Miller, Kansas Press Assoc., 701 Jackson St., Topeka, Kans. Missouri Secy.-Treas. William A. Bray, Missouri Press Assoc., 115 Walter Williams Hall, Columbia, Mo.

Lithographers National Assoc., Inc.—Exec. Dir. Oscar Whitehouse, 381 Fourth Ave., New York 16, N. Y.

Mid-Atlantic Newspaper Mechanical Conf.—1959 Conf., Shelburne Hotel, Atlantic City, N. J., Mar. 12-14. PNPA General Mgr. Richard Dew, 2717 N. Front St., Harrisburg, Pa.

National Assoc of Litho Clubs — Exec. Secy. Edward L. Bode, 504 Majorie Ave., Dayton 4, O.

National Assoc. of Photo-Lithographers—1958 Conv., Statler Hotel, Boston, Mass., Sept. 10-13. Exec. Dir. Walter E. Soderstrom, 317 W. 45th St., New York 36, N. Y.

National Paper Trade Assoc.—1959 Meeting, Waldorf Astoria Hotel, New York, N. Y., Apr. 1-3. Secy. J. H. Londergan, 220 E. 42nd St., New York 17, N. Y.

National Printing Equipment Assoc., Inc.—1958 Meeting, Statler Hotel, Dallas, Tex., Oct. 13-16. Secy. James E. Bennet, 140 Nassau St., New York 38, N. Y.

National Safety Council Printing and Publishing Section—Staff Rep. Harry C.

hourly pay rates.

LETTER TO THE EDITOR

Newspaper Sales Up

Dear Mr. Editor: I sell twice as many of your newspapers at Third and Main as I use to. It all started the day they opened up the new water works. Your paper was full of pictures of the mayor and the big crowds. Well, people would walk up to my news stand and see their selfs. In the pictures of the crowds in your paper, I mean. Then they would buy ½ dozen or so copies of your paper. And ever since that time they seem to like your paper best. Because all your pictures are so clear.

—A KID NAMED JOE

Dear Kid Named Joe: That was the very day we switched to Burgess mats. You're so right about the pictures being clear, and the type is too.

—Ed

capital. The balance would go many

BURGESS CELLULOSE COMPANY

Manufacturers and Distributors of
Burgess Chrome and Supreme Tone-Tex Mats, Freeport, Illinois

BURGESS Chrome MATS

Canadian Representative, R. M. Lousen & Co., Ltd.,
Kennedy Road, Agincourt, Ontario

For More Information Circle 26 on Reader Service Card

Buys Two Original Heidelbergs—Tri-Arts Press, Inc., New York, N. Y., recently installed two new Original Heidelberg 15 in. by 20½ in. automatic cylinder presses. This brings the number of Heidelbergs at Tri-Arts to four, a 12 in. by 18 in. OH platen press and a 21 in. by 28 in. OH automatic cylinder having already been installed.

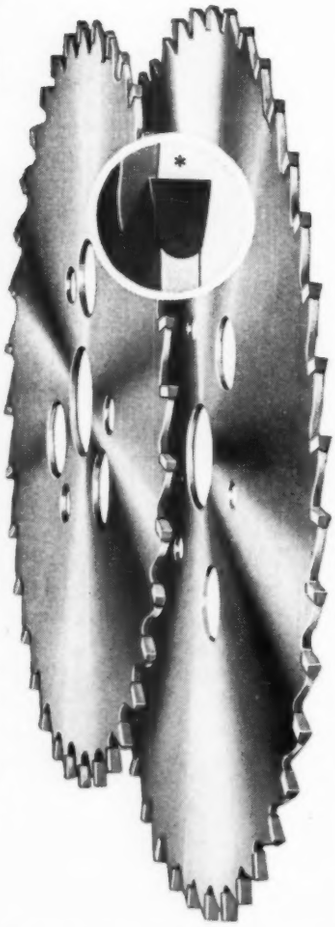
CARBIDE PRINTERS' "THINSAW"

Just $39.50 and YOU TRY IT FREE FOR 30 DAYS!

Here's a saw that's designed especially for your composing room! The patented, long-lasting carbide tips cut base, slugs and new alloys including Dowmetal, operating smoothly without scream, pileup or sticking. It's manufactured with as many teeth as saws costing much more . . . gives you cleaner cuts, freedom from burrs and excellent back rake cutting . . . without need for trimmer blades. Patented construction holds the carbide tips firmly against side thrust, while an extra strong braze secures them for life.

The Gay-Lee Printers' "Thinsaw" is standard in many large composing rooms, where it outlasts all others and soon pays for itself. Want proof in your own shop? Try a Gay-Lee Printers' "Thinsaw" at our risk . . . *absolutely free for 30 days.* If not completely satisfied, return it for full credit. You can't go wrong with this free trial offer, *so act now!*

(IMPORTANT: Please specify make of machine on which saw is to be used.)



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Johnson, National Safety Council, 425 N. Michigan Ave., Chicago 11.

New England Composing Room Executives Assoc.—1958 Conf., Hotel Bancroft, Worcester, Mass., May 17-18. Secy. Lewis R. Greene, Westerly (R. I.) *Sun.*

New England Newspaper Mechanical Conf.—1958 Conf., Statler Hotel, Boston, Oct. 18-19. Secy.-Treas. Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day.*

Newspaper ROP Color Conf.—1958 Conf., Waldorf Astoria Hotel, New York, N. Y., Sept. 15-17. Secy Arthur Brashears, American Assoc. of Newspaper Representatives, 141 E. 44th St., New York, N. Y.

New York State Capital District Mechanical Conf.—Dir. Floyd Laurenty, Albany (N. Y.) *Times-Union.*

Northwest Mechanical Conf.—Secy.-Treas. Ralph N. Carson, Linecasting Instructor, Dunwoody Industrial Institute, 818 Wayzata Blvd., Minneapolis, Minn.

Pacific Newspaper Mechanical Conf.—1958 Conf., Mark Hopkins Hotel, San Francisco, Calif., Sept. 5-7. Secy. Ed Maggi, Phillips & Van Orden Co., 879 Brannan St., San Francisco, Calif.

Packaging Institute Assoc.—1958 Meeting, Edgewater Beach Hotel, Chicago, Oct. 13-15. Exec. Dir. Chas. A. Feld, 342 Madison Ave., New York 17, N. Y.

Printing Industry of America—1958 Conv., Statler Hotel, Dallas, Tex., Oct. 13-16. Gen. Mgr. Bernard Taymans, 5728 Connecticut Ave., N.W., Washington 15, D. C.

Research and Engineering Council—1958 meeting, Edgewater Beach Hotel, Chicago, May 21-23. Managing Dir. Robert E. Rossell, 5728 Connecticut Ave. N.W., Washington 15, D. C.

SNPA (Western Div.) Mechanical Conf.—1959 Conf. Hotel Texas, Fort Worth, Tex., Mar. 8-10. Secy. Walter Johnson, jr., P.O. Box 1569, Chattanooga 1, Tenn.

Southern Graphic Arts Assoc.—1958 Conv., Brown Hotel, Louisville, Ky., May 19-21. Secy. Charles E. Kennedy, 1514 South St., Nashville 2, Tenn.

Screen Process Printing Assoc., Intl.—1958 Conv., Sheraton Palace Hotel, San Francisco, Calif., Aug. 22-24. Exec. Secy. Robert H. Blundred, 549 W. Randolph St., Chicago 6.

SNPA (Eastern Div.) Mechanical Conf.—1958 Conf., Dinkler-Plaza Hotel, Atlanta, Ga., Aug. 17-19. Secy. Grady M. Lemons, Southern Newspaper Publishers Assoc., P.O. Box 1569, Chattanooga 1, Tenn.

Technical Assoc. of the Graphic Arts—1958 Conv., Beverly-Hilton Hotel, Los Angeles, June 23-26. Secy.-Treas. B. L. Sites, Miehle Printing Press & Mfg. Co., 2011 W. Hastings St., Chicago 8.

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Many printing plant executives pass along copies of *Printing Equipment Engineer* regularly to interested employees in the plant. In this way, a more interested production organization will be maintained.

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By Theodore F. Makarius

This 254 page book has been written especially for the man who must makeready and operate the offset printing press.

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Color Charts are included. One of these demonstrates difference in cleanliness of color when mixing two inks which complement each other. Another color chart has been prepared to show the result of mixing different percentages of components.

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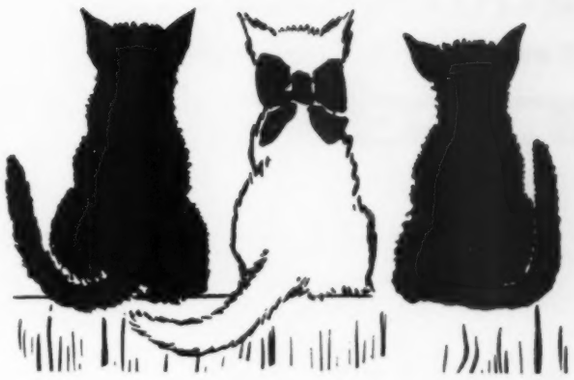

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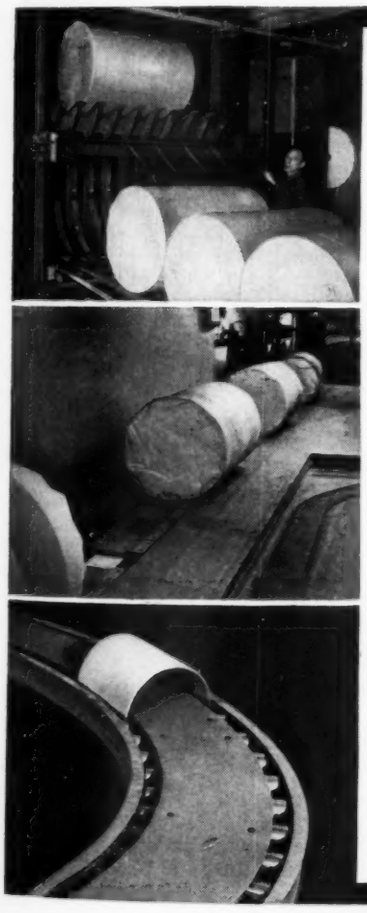

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EQUIPMENT
Sales & Installations
REPORTS

Chemco Installations

Chemco Photoproducts Co., Inc., reports the following installations:

Chemco Model F-1200 Camera—Lanman Engraving Co., Washington, D. C.; U. S. Department of Commerce, Washington, D. C.; St. Petersburg (Fla.) *Times;* Rapid Grip & Batten, Montreal, Can.; Montreal *Gazette,* Montreal, Can.; Acme Photo Engraving Co., San Francisco, Calif.; Olympic Engravers, Bremerton, Wash.; Carroll Photo Engraving Co., San Francisco, Calif.

Chemco Model F-1212 Camera—The Wallace Press, Chicago.

Chemco Olympian Camera—American Newspaper Publishers Association Laboratory, Easton, Pa.; Cincinnati (O.) *Times Star.*

Dow-Chemco Model No. 510 Etching Machine — Hampton *Leader,* Delaware Township, N. J.; Knickerbocker Engraving Co., New York, N. Y.; Superior Engraving Co., Buffalo, N. Y.; Liberty Engraving Co., Pittsburgh; Item Publishers, Inc., Yonkers, N. Y.; Powers Photo Engraving Co., New York, N. Y.; Philadelphia *Enquirer;* Lynchburg Engraving, Lynchburg, Va.; Southeastern Engraving, Roanoke, Va.; Summit Photo Engravers, New York, N. Y.; Globe & Mail, New York, N. Y.; Hamilton Photo Engraving, Paterson, N. J.; Erie Engraving Co., Erie, Pa.; Peerless Engraving Co., Philadelphia; Lancaster Photo Engraving Co., Lancaster, Pa.; The Houston (Tex.) *Post;* Process Engraving Co., Ft. Worth, Tex.; Southwestern Engraving, San Antonio, Tex.; Spartonburg (S. C.) *Herald Journal;* Engravers, Incorporated, Miami, Fla.; Alabama Engraving, Birmingham, Ala.; Knoxville (Tenn.) *News Sentinal;* Tribune Co., Tampa, Fla.; Ad Service Engraving Co., St. Louis, Mo.; Northwest Publications, St. Paul, Minn.; Kable Printing Co., Mt. Morris, Ill.; Cincinnati (O.) *Times Star;* Newspaper Service Corp., Chicago; Newsplate Engraving, Detroit; Ace Engraving, Plainwell, Mich.; St. Louis Engraving, St. Louis, Mo.; Reliable Etchcraft Co., Chicago; A. & M. Engraving Co., Detroit; Kenand Photo Engraving Co., Cincinnati, O.; Sta-Hi Color Service, Fullerton, Calif.; Master Photo Engraving, San Francisco, Calif; Booth-Brigdens, Winnipeg, Can.; W. E. Booth Co., Toronto, Can.; Rapid Grip & Batten, Montreal, Can.

Miehle Installation—John Frederic Printing Co., Denver, Colo. recently installed this Miehle 29 offset, serial No. 1000. Pictured are Robert Frederic, Homer Frederic and Tom Griffin, partners in the firm, observing as production is started on the new press.

Intertype Installations

Intertype Company, Div. Harris-Intertype Corp., has reported the following installations:

Woonsocket (R. I.) *Call* has adopted Intertype's 8 pt. Regal No. IB TTS with bold set on a 9 pt. slug. The *Call* also reduced its column width to 11 picas and changed its format from eight to nine columns.

Scranton (Pa.) *Tribune* has selected Intertype's 8 pt. Imperial TTS with bold for its new dress.

ATF Installations

American Type Founders Co., Inc. reports the following installations:

ATF Chief 15 Offset Press—Beacon Service Co., Brooklyn, N. Y.; Volmr-Alan Printing & Offset Co., Inc., Norwalk, Conn.; Skilcraft Offset & Printing Corp., New York, N. Y., and Alert Print Shop, Newark, N. J.

ATF Chief 20 Offset Press—John L. Savona, Rocky Point, N. Y., and R.T.C. Lithographers, Inc., New York, N. Y.

ATF Chief 22 Offset Press—Fermaprint, Inc., New York, N. Y., and R. Brown Associates, New York, N. Y.

Photon Installation

Photon, Incorporated has announced the following installation:

Photographic Type Composition Machine—Science Press, Inc., Lancaster, Pa. (2).

Goss Installation

The Charlottesville (Va.) *Daily Progress* recently ordered an eight page deck for its Goss Dek-A-Tube press. Addition of the deck will allow the paper to print up to 48 pages. It also will provide increased flexibility for ROP color production. This is the second press expansion within a year, the *Daily Progress* having installed its 16 page Dek-A-Tube last spring.

New Goss press equipment is being installed by the South Bend (Ind.) *Tribune.* When installation is completed in the near future, the newspaper will be able to print one, two, three and four colors, as well as process color. Installation will increase the *Tribune's* press equipment to 18 Goss Headliner units with three folders and eight color decks. On a collect run, press capacity will be 112 pages with or without four colors. On a straight, double plate run press capacity will be 72 pages without four colors or 64 pages with four colors. New presses will print 52,500 copies per hr.

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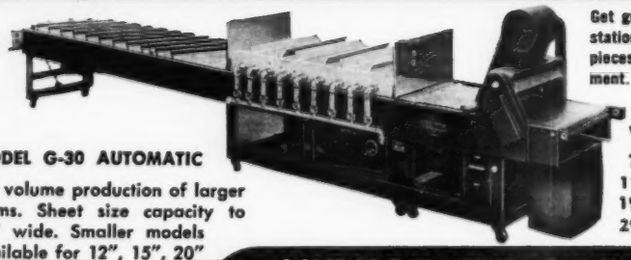

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Precision ground to give an accuracy unequalled by other methods of machining PMC Sterling Toggle Base in magnesium or semi-steel simplifies lock-up—saves time—increases profits.

THE PRINTING MACHINERY CO.
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Cincinnati 2, Ohio

For More Information Circle 147 on Reader Service Card

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Asks the new assistant business manager?

"Why do we give all of our mat business to just one firm? Why not spread it around and have all the manufacturers on their toes to give us good service?"

The stereo superintendent explains—"There are small but important differences between the different brands that call for different handling. To mix them, or make arbitrary changes would mean confusion and faulty work.

Besides, we have had such amazingly good and uniform results from Certifieds, it would be like asking for trouble to switch.

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Certified DRY MATS

CERTIFIED DRY MAT CORPORATION, 555 Fifth Avenue, Dept. M, New York 17, N. Y.

For More Information Circle 36 on Reader Service Card

Mid-Atlantic Conference

(Continued from Page 60)

purchase of the business. First decision was to combine production in one place. That put the firm's four linecasting machines in one plant. Next step was to buy three TTS punches, two operating units, two keyboards, spare parts, a couple mat kickers, and TTS cut mats for the machines. The operating units were installed on two Model 8s.

"In one day the Model 8s turned out 32 galleys of type from 7 a.m. to 3 p.m.," he said. "Our errors per galley run from none to six. Our punchers gobble up copy so fast we have to use them on other jobs a couple days of the week. We have part-time operators trained and at least six of us can punch tape. We have type running out of our ears when we need it."

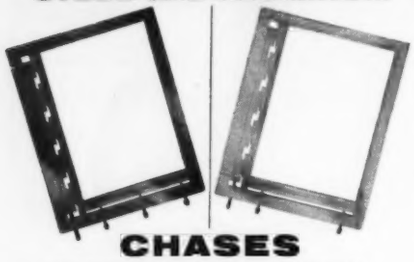
Math for Plant Layout

"If you're not interested in things like profits and losses, you ought to be humane enough not to want to wear out prematurely these poor guys who work for you," said Herman E. Basehore, co-publisher, Meyersdale (Pa.) *Republican*, in talking about plant layout for the weekly newspaper. He went on to demonstrate the waste accumulated by 10 extra steps taken 50 times a day. He said it amounts to about 1,000 extra feet per day, or 300,000 feet in 300 working days, or the equivalent of nearly 60 miles of useless travel in a year.

"A printer psychologically is a better man working in and around equipment that has a meaning and purpose in the way it is laid out," Basehore commented.

Investment in Youth—Cleveland Craftsmen devoted one of its recent meetings to youngsters they want to interest in printing as a career. The experiment at the local level included a program with emphasis on printing education. It was attended by sons of Craftsmen, apprentices, students and even "the neighbor's boy." One of the groups is shown above (clockwise from lower left): Robert Kutler and son, Schaefer Printing Co.; Ed Roth, Nela Press; Art Hogling and son, Western Newspaper Printing & Matrix Co.; and Lee Kornel between his two sons, Nela Press.

AMSCO
STEEL and ALUMINUM



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Detailed inventory on request

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Literature

(Continued from Page 30)

TWO COLOR-PERFECTOR PRESS

Miller's TPJ 23 in. by 36 in. two color-perfector offset press is the subject of a two color folder prepared by Miller Printing Machinery Co. It is said conversion from perfecting press to two color press can be done quickly. Illustrations and a diagram of the sheet travel are contained in the folder. Circle No. 331 on Reader Service Card.

SYNTHOX ROLLERS

Ideal Roller & Mfg. Co. is offering a four page bulletin to describe its Synthox letterpress rollers. According to Ideal, features include high speed production, performance in all weather, and ease of care and wash-up. Circle No. 332 on Reader Service Card.

CORKPAK COMPANY

Literature has been released by Corkpak Company, Inc. regarding its tympan paper, draw-sheets, cutting rubbers, and other newspaper pressroom and stereotype supplies. Specifications and prices are given. Circle No. 333 on Reader Service Card.

HOE MOVIE ON COLOR

Color Sells Everything, a 30 min. film in sound and color, has been produced by R. Hoe & Co., Inc. to help newspapers promote local advertising and ROP color. Film is available without charge to any newspaper. Circle No. 317 on Reader Service Card.

SPHEREKOTE DRAWSHEETS

Sample swatches of glass armored Spherekote drawsheets are being offered by Minnesota Mining & Mfg. Co. According to 3M, advantages include resistance to leader marks and matrixing, longer life and uniform caliper. Circle No. 309 on Reader Service Card.

INK COMPOSITION BOOKLET

Small Drops of Ink, a booklet concerning the problems of ink composition, production and formulation, is available from General Printing Ink Co., Div. Sun Chemical Corp. Included is a chart which analyzes 24 different ink pigments and indicates the degree of transparency or opaqueness that can be expected from each. Circle No. 339 on Reader Service Card.

BUSINESS FORMS PRESSES

ATF-Webendorfer high speed business forms presses are discussed in a six page folder offered by American Type Founders, Inc. Presses are available with either offset or rubber plate printing units, or a combination of both. Sizes are 17 in. and 22 in. cut-off, with 26½ in. max. web width. Circle No. 312 on Reader Service Card.

SCOTT EQUIPMENT

Literature has been released by Walter Scott & Co. concerning its press units, folders and reels, tensions and pasters. Scott press units can be equipped for ROP color production. Circle No. 316 on Reader Service Card.

Bindery

MACEY COLLATOR BOOKLET

Macey Company, Sub. Harris-Intertype Corp., is offering an eight page booklet to describe how six companies have cut their collating costs. Applications described include the assembly of multi-page letters, catalog additions, price lists and changes, office reports, advertising pieces and booklets. Circle No. 341 on Reader Service Card.

Miscellaneous

STEEL FLOOR PLATE

A. W. Algrip abrasive rolled steel floor plate is the subject of Booklet AL-E30 released by Alan Wood Steel Co. Plate is recommended for safe footing around presses or wherever slipping hazards exist in a plant. Circle No. 308 on Reader Service Card.

(Continued on Page 82)

Photomechanics and Printing

By J. S. Mertle and Gordon L. Monsen

Two authorities have pooled their knowledge in producing a technical book to cover every phase of platemaking and presswork in Graphic Arts reproduction processes.

Valuable source of information for all printing plant and production managers, superintendents and departmental foremen.

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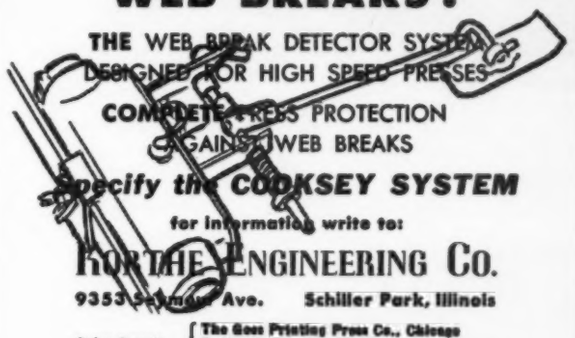

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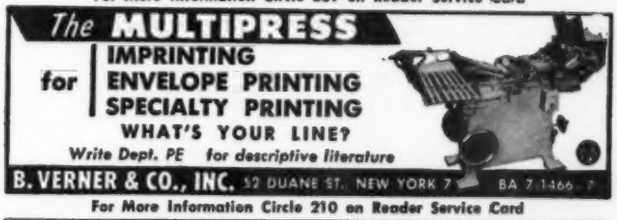

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25 Years DRYER *Experience*

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Installs Tirfing Presses—Peter F. Mallon, Inc., Long Island City, N. Y., recently held an open house to mark the installation of two 31 in. by 41 in. Tirfing cylinder presses. Pictured with the new Tirfings are, left to right, William F. Hemminger, vice president in charge of production; Peter F. Mallon, chairman, both of Mallon, and Alfred Heydenreich, vice president, Tirfing Printing Machinery, Inc.

THERMO-CRAFT CATALOG

Thermo-Craft Press has issued its 1958 catalog showing its complete line of social and commercial announcements. Catalog is 15 in. by 12½ in. loose leaf, Mult-O ring bound so that it opens flat. Included are 44 pages on which are mounted 181 samples of announcements. Circle No. 340 on Reader Service Card.

EASTERN CATALOG

Eastern Newspaper Supply, Inc. has released a catalog in which is described over 500 items to meet production needs. Data regarding equipment for composing rooms, pressrooms, stereotype and photoengraving departments are given. Circle No. 319 on Reader Service Card.

DOCK LEVELING DEVICES

Rowe Methods, Inc. has published a catalog sheet to illustrate and describe its line of mechanically counterbalanced, truck actuated dock leveling devices. Specifications are included. Circle No. 342 on Reader Service Card.

PAPER HANDLING SYSTEM

Elwell-Parker Electric Co. has issued its Case History Report No. 36 to describe its handling and storage systems for paper rolls. The report covers the activities of the New York (N. Y.) *Daily News'* newsprint terminal where 8000 rolls are handled at one time. Circle No. 345 on Reader Service Card.

PRECISION TOOLS

Theo. Alteneder & Sons is offering a catalog concerning its stainless steel T-squares, triangles, straightedges, and precision drawing instruments and scales. Circle No. 328 on Reader Service Card.

COLORCAST PAPER

Champion Paper and Fibre Co. is offering a booklet in which is included hints for printing the firm's line of Colorcast drum finished papers. Colorcast is a coated one side grade having a smooth, mirror like surface and light fast, brilliant colors. Information on makeready, inks, heat and speed drying, spraying and also samples of colors are given in the booklet. Circle No. 349 on Reader Service Card.

ELECTRONIC GRAPHIC COMPUTER

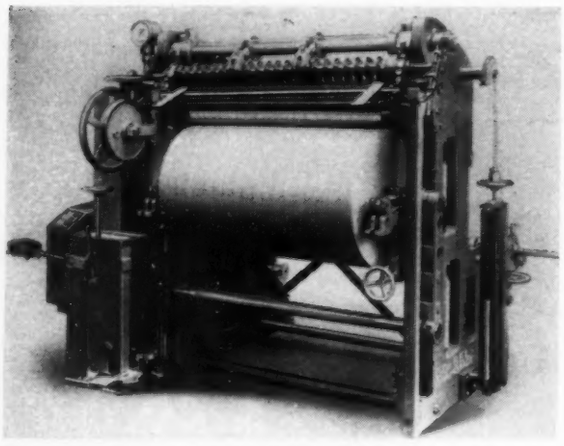
An instruction manual for operation of the Cybergraph electronic graphic computer has been prepared by Cybergraph Corporation. Device can be used to compute maximum type size for one line, picas for one line, shrinkage in mats, fractions to points, and many other problems in copyfitting. Circle No. 350 on Reader Service Card.

FORK TRUCK MAINTENANCE CHART

An electric fork truck preventative maintenance chart said to enforce time and money saving maintenance practices is offered by Lewis-Shepard Products, Inc. Two case history bulletins describing how companies are said to have solved paper handling problems are also available. Bulletins are illustrated. Circle No. 335 on Reader Service Card.

PENCO STEEL SHELVING

Bulletin No. B-20, regarding the Penco line of phosphatized steel shelving, has been released by Penco Metal Products Div., Alan Wood Steel Co. The eight page, two color bulletin describes and illustrates six styles of open and closed types of shelving. Circle No. 338 on Reader Service Card.



Slitter-Rewinder Machines—Cottrell Company, Sub. Harris-Intertype Corp., has been named exclusive U. S. distributor of a new line of slitter rewinder machines, manufactured by Goebel Company, West Germany. Machines have applications in the paper, foil, film and boxboard converting fields. A feature of the slitter-rewinders is the Goebellette shearing principle. It employs throw-away cutting collars which are said to eliminate regrinding costs for bottom cutters and reduce slitting inaccuracies. Three models, ranging from 39½ in. to 63 in. width, are available. Circle No. 286 on Reader Service Card.

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MAY 1958

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The HAMMOND EasyKaster 8 is built for fast handling and for fast casting. There is no wasted time and no unnecessary movements in heating the metal, loading the mat, locking the box and pouring the metal.

Model EK-8P with 800 lb. valve controlled gas melting pot. Other gas and electric models available in 5 and 6 col. sizes.

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"IF WE ONLY HAD A FOTOSETTER, THIS JOB WOULD BE A SNAP"

Superintendent: "Look at this complicated mess; no wonder I'm losing all my hair. It calls for every trick in the book, reverses, angles, boxes, big type, crazy mixes—and we get more ads like this every day."

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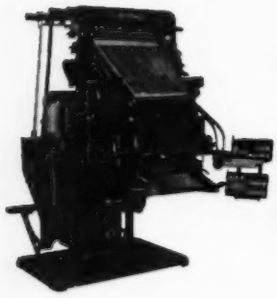
Superintendent: "Yeah—I can't argue with that."

Manager: "If we had Fotosetter machines, we could use quicker makeup methods —save a lot of time and floor space. There'd be no storage headaches or forms to break up either. By setting directly on photographic paper we'd have no repro problems."

Superintendent: "It's about time we got out of this rut. Let's call in Intertype and learn what Fotosetter is all about."



INTERTYPE COMPANY 360 Furman Street, Brooklyn 1, N.Y.
A Division of Harris-Intertype Corporation

HARRIS INTERTYPE CORPORATION

CHICAGO, SAN FRANCISCO, LOS ANGELES, NEW ORLEANS, BOSTON

In CANADA: Toronto Type Foundry Company Ltd., Toronto, Montreal, Winnipeg, Vancouver, Halifax

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Set in Fotosetter Impact and Bodoni Book.

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